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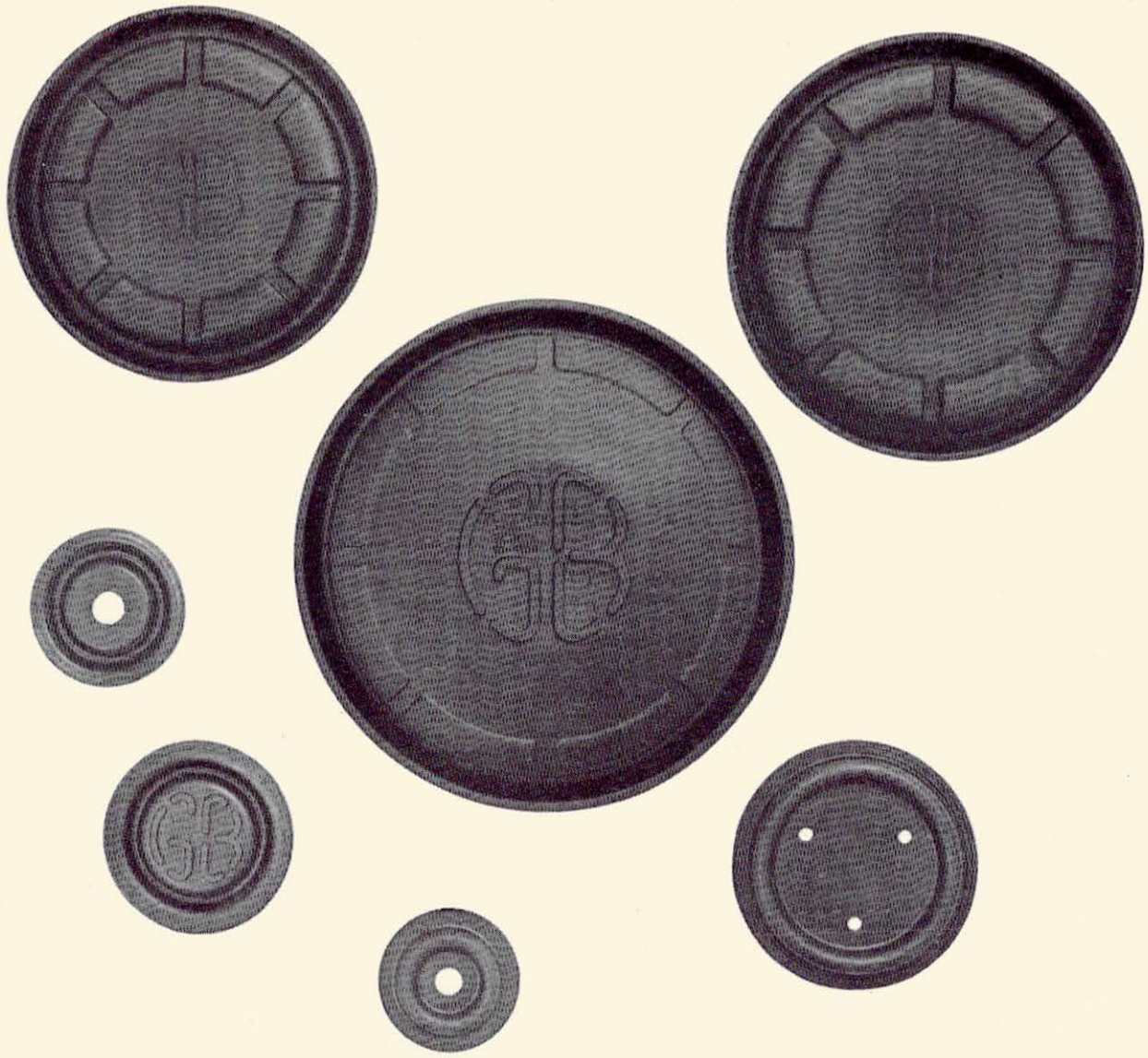

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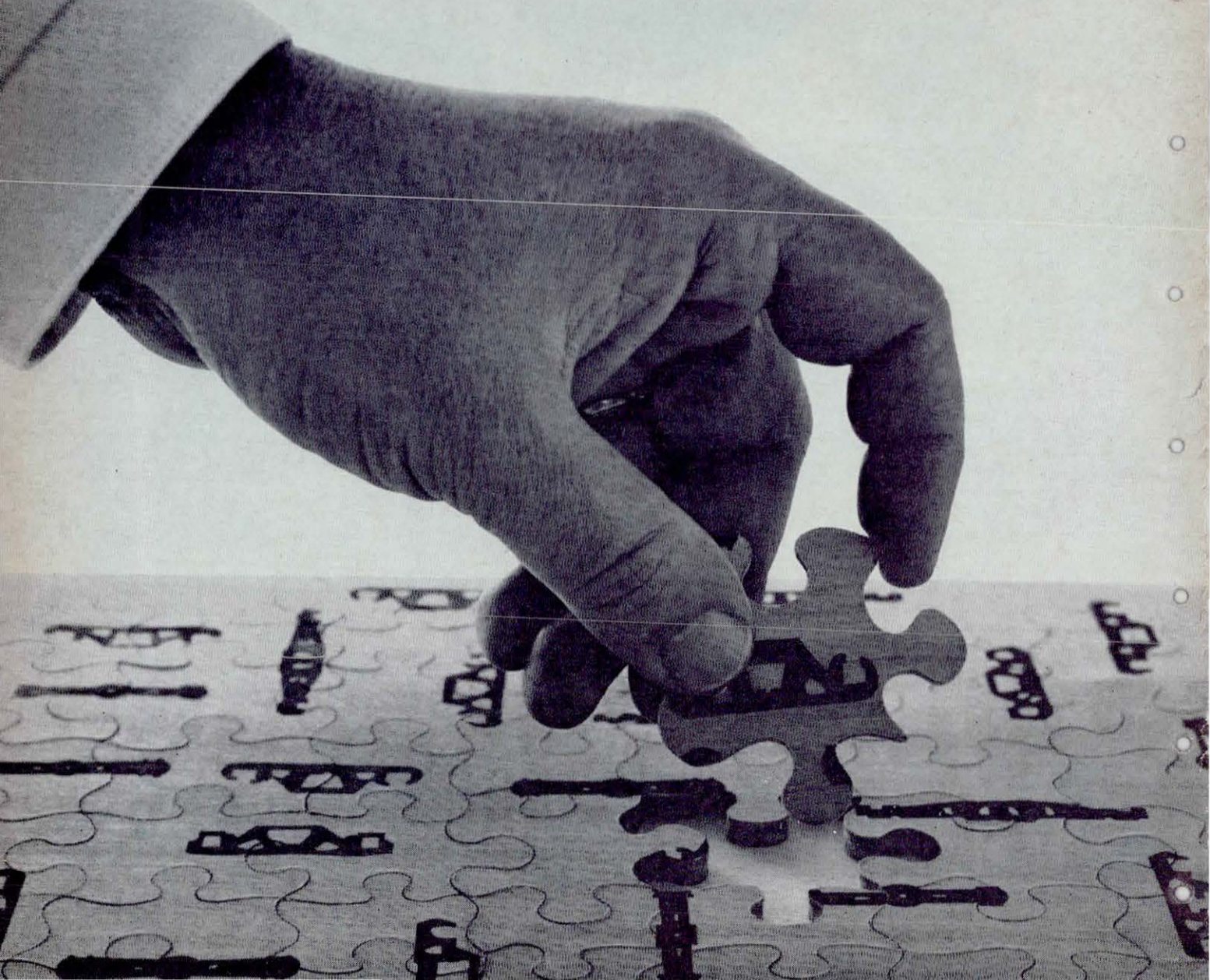

RAILWAY AGE

May 5, 1969 • Vol. 166, No. 16

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With the money problem solved, BART heads into the home stretch.

19 BART reaches big milestones in construction

The San Francisco Bay tube is in place and track is being laid.

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. . . AND COMING NEXT WEEK

The Golden Spike: 100 years later—The next issue of Railway Age will be dated May 10, 1969, one century to the day after the historic meeting of Union Pacific and Central Pacific rails at Promontory, Utah. That meeting, which created this nation's first transcontinental railroad, has been called the first great revolution in American transportation. Today, we are on the verge of a second revolution: the creation of great unified, transportation systems. That next revolution, as well as the first, will be described by Railway Age editors.

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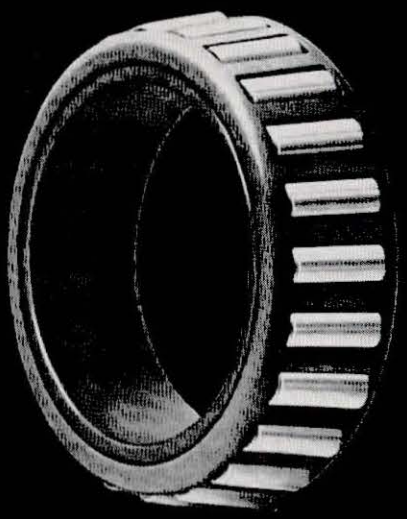

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SHORT AND SIGNIFICANT

Company formed to promote the auto-train

The Auto-Train Corp. has been formed to "produce and operate trains designed to carry automobiles and their passengers over distances many consider too long to drive." President and chief executive officer is Eugene K. Garfield, who was an assistant to former Secretary of Transportation Alan K. Boyd. (DOT studied the auto-train concept, but was unable to get money from Congress for a prototype. Ford Motor Co. has been studying the idea in recent months.) The New York financial firm of Tracy, Peterson & DeVoe, Inc. established the Auto-Train Corp. The firm specializes in both equipment lease financing and venture capital. An announcement last week said initial funds have been raised and the firm "is now raising the additional capital necessary to produce the first train and have it operating in about two years."

First station consolidation set in Chicago

It appears that Chicago Mayor Richard J. Daley may get at least part of the loaf in his long-held desire to have the city's railroad passenger services operating out of a minimum number of terminals. Grand Central Station, vintage 1890, is set for abandonment, with its few remaining Chesapeake & Ohio/Baltimore & Ohio trains scheduled for transfer into Chicago & North Western terminal. This would leave the city with five stations—Union, C&NW, Illinois Central, Dearborn Street and LaSalle Street (from which former New York Central operations have already been moved). For years, Chicago planners have dreamed of a one-station setup—but it seems most likely now that operations will eventually be consolidated into a minimum of three stations—Union, North Western and a new IC terminal on the lakefront.

"Super C"—today's version of the "Fast Mail"

If parcel post and other bulk mail service starts looking better—between certain points, at least—some of the credit may be owing to Santa Fe and the Post Office Department and their experimental mail-van dispatch via "Super C" (RA, April 28, p. 7). The TOFC/COFC speedster will be handling 15 to 20 vans daily in each direction. Westbound, it will have mail for Kansas City and Los Angeles from Chicago and from seven eastern points (New York, Boston, Springfield, Harrisburg, Philadelphia, Cleveland and Detroit). Eastbound, it will carry mail from Los Angeles and Kansas City for Chicago and for points east. "Super C" has a published schedule of 40 hours, Chicago/Los Angeles—but it's been averaging 37 hours on its cross-country dash thus far. Post Office officials say the experiment will be evaluated after eight weeks "to see if its objectives have been attained."

New unit trains proposed for potash movement

Burlington, Great Northern and Norfolk & Western are planning to take a good idea and make it better—in expanding the unit-train potash movements which CB&Q and GN began last year (RA, Dec. 9, p. 19). In the initial operation, Canadian potash is trucked to Northgate, N.D., and then moved in trainload quantities to terminals in Illinois. In the proposed operation, potash will move in 100-car trains from Northgate to Maumee, Ohio, and Norfolk, Va., for domestic use and for export. Proposed rates would be about 50% of rates now in effect.

Hotbox incidence up in 1968

The 1968 average of 1,655,083 miles per hotbox set-off for North American railroads was appreciably poorer than the 1967 figure of 1,828,329. The increased incidence of freight-car journal failures during 1968 recently set off an AAR program to increase the frequency of servicing and maintaining unstabilized and unsealed journal boxes (RA, March 17/24, p. 56). The 1968 result, based on monthly reports of individual railroads submitted to the AAR Mechanical Division, was even lower than the 1,693,574 miles per set-off which the industry averaged in 1966.

MONDAY MORNING REPORT

OMISSION OF A DOT SPEAKER

Transportation Secretary John A. Volpe spreads the word: Coordinate, coordinate, coordinate. He's willing to pick up his predecessor's theme at the risk of seeming to lack something new to say. Old or new, this is what must be said, Mr. Volpe has decided. Just as commendable is the deployment of his top-level men as a stereo set to enlarge the impact of his message. However, the listener may notice an omission in one speaker.

MORE THAN MOTORCYCLES MISSING . . .

Under Secretary James M. Beggs makes the point that it's time to "study our transportation problems seriously and objectively and from the standpoint of the national interest rather than the interest of any one mode." Then Mr. Beggs supports the need for such objectivity by making a distinction between network and system. But something more than a Honda is missing from his next statement: "We do not have a transportation system in this country and we won't have one until we stop looking at transportation as an aggregation or congestion of trucks, buses, barges, cars, planes and freighters, and start to think of it in terms of how the parts mesh into an integrated, coordinated system for meeting the national interest."

. . . FROM STATISTICS, TOO

By 1975, Mr. Beggs says, there will be 100 million autos and 20 million trucks and buses and 300% more air traffic. This will have to be coordinated or the demands of 230 million people—75% crunched into three metropolitan areas—and of a gross national product bigger by 50% will be totally frustrated. Some things he sees are emission-free engines, automated air-traffic control, automated billing for freight and passenger service, electronic highways, and linear induction motors for air-cushioned transit vehicles. The nearest reference to railroads is a prediction of a tunneling breakthrough that will revolutionize subway construction.

OVERSIGHT OR BLIND SPOT?

It could be that the omission is merely an oversight. There may have been a fly speck on somebody's crystal ball. But rails already have had enough trouble squeezing into statements by Mr. Volpe himself (helped somewhat by Metroliner). Are Mr. Volpe's speakers already influenced by the Washington axiom that when you talk transportation you don't talk railroads? Are they already afflicted with a blind spot toward rails in the coordinated transport system of the future?

New action starts on per diem

Burlington is asking the ICC to reopen freight-car per-diem proceedings and to impose a 50% increase in per-diem rates applying to plain box cars.

The road's basic point is that a critical shortage of box cars exists, that the situation has grown progressively worse in recent years, and that there will be "tragic consequences" unless some action is now taken. The serviceable fleet of plain (unequipped) cars has declined, it notes, from 653,060 units on Jan. 1, 1958, to less than 375,000 units last March 1—while "no other class of railroad equipment shows [this] persistent, continuing and damaging decline in ownership."

Present per-diem charges range from $2.16 to $12.18, depending upon car investment. But more than 90% of the plain-box fleet falls within the lowest three per-diem classifications, of $2.16, $2.79 and $3.58.

With the proposed 50% increase, these rates would go up to $3.24, $4.18 and $5.37, respectively.

The petitioning road isn't suggesting that even these increases will be adequate "to make box-car ownership an attractive investment and reverse the frightening downward trend in the supply of such cars. In light of experience, it may be necessary later to provide further incentives, and the Commission should retain jurisdiction to make further changes if necessary."

But, Burlington says, immediate incentive increases would be a start toward compliance with a 1966 mandate from Congress to the ICC to "fix per-diem charges . . . upon a basis which will encourage the acquisition and maintenance by the railroads of a car supply adequate to meet the needs of commerce and the national defense."

The road also notes that the Commission has ordered increases in demurrage charges effective May 1 because, in the ICC's words, "there are acute shortages of freight cars throughout the country."

If this finding justifies substantially increased demurrage charges, the Burlington contends, "it certainly would seem to justify a modest increase in per-diem charges."

Whatever the ICC does about other equipment, Burlington concludes, "it cannot temporize further with respect to the urgent necessity of increased per-diem charges on plain box cars." ■

LUTHER MILLER

AS THE EDITOR SEES IT

TWO QUESTIONS—(1) Which is more important—getting the jet set from New York to London in three hours instead of six; or getting workers to their jobs with some degree of comfort and convenience? (2) Why did the United States Post Office commit the colossal error of junking the RPO car? From Senators Clifford Case and Gordon Allott, ever the espousers of sensible, unpopular causes, have come some interesting answers in recent days.

CASE FOR TRANSIT—New Jersey's Senator Case, ranking Republican member of the Transportation Appropriations Subcommittee, takes the outrageously sensible position that the billion-dollar supersonic transport project—"which will benefit relatively few"—ought to take a back seat while we cope with the problems of mass transit. He is also going to give priority to finding out "how best to bolster the sagging fortunes of our passenger railroads." Score two for Case. May his tribe increase.

ALLOTT FOR RAIL MAIL—Colorado's Senator Allott has made no secret of the fact that he is appalled and angered by the shift of mail from rails (which did the job well all of the time) to airlines (which do the job well some of the time, but can't cope with the sheer size of it most of the time). Now, Senator Allott has come up with the information that (1) the assistant postmaster general who "essentially" made the decision to abandon the RPO car has resigned from government to become an officer of an air taxi company; and (2) that air taxi company has seen its air mail revenues jump from $60,030 in 1967 to $1,289,851 in 1968. Senator Allott has now asked the Nixon Administration to re-examine "the whole matter of mail transportation."

DOES HISTORY TEACH US NOTHING?—What Senators Case and Allott are really exercised about is the shocking waste that results when any single mode of transportation is favored at the expense of another. We only wish the good Senators could see beyond the passenger train—because the same fate could lie just around the bend for the freight train, which is being similarly victimized. And what has happened to our mail and passenger service provides only the mildest hint of what can happen to the nation's freight service unless the Allotts and the Cases and their colleagues begin to show some of the same concern for the freight train (while there is still time) that they are showing for the passenger train (when it is too late).

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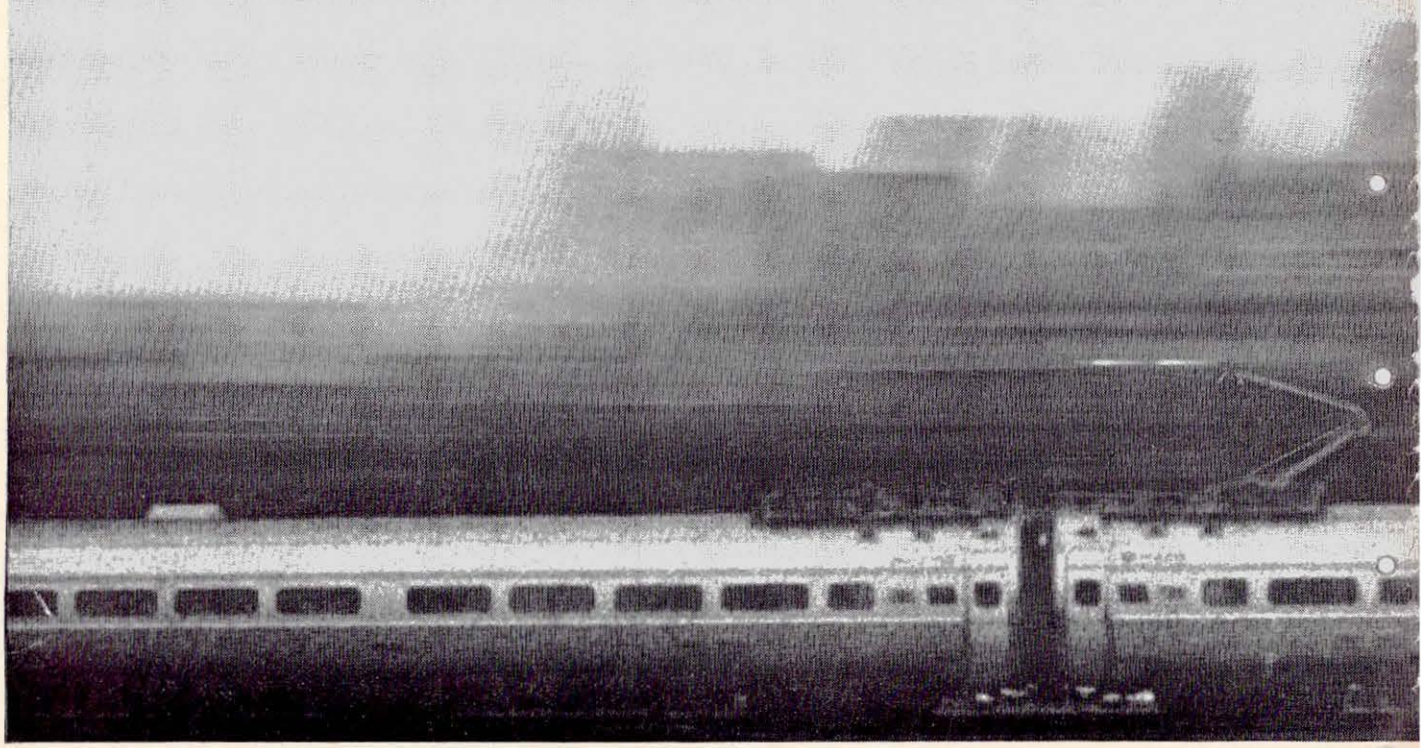

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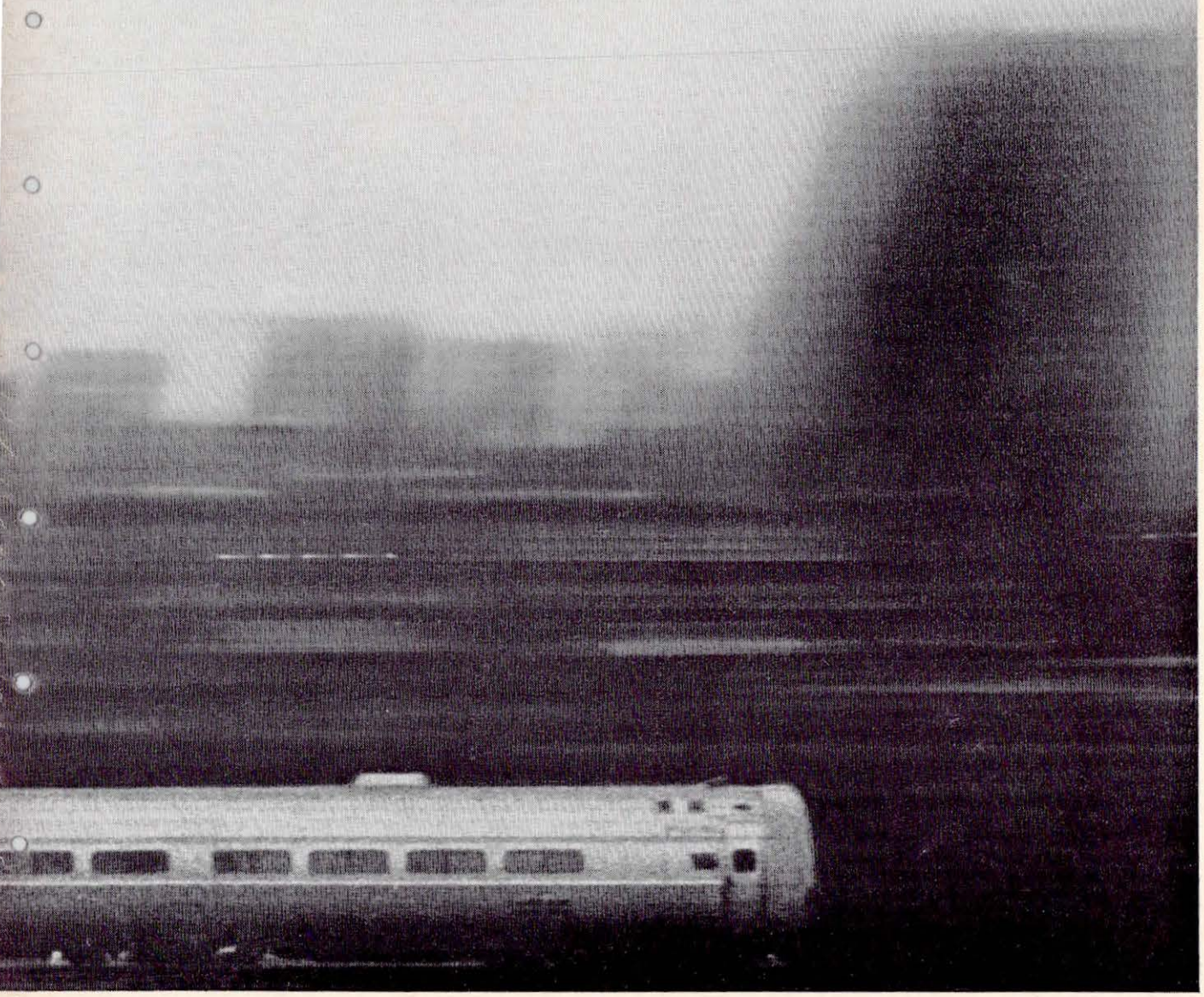

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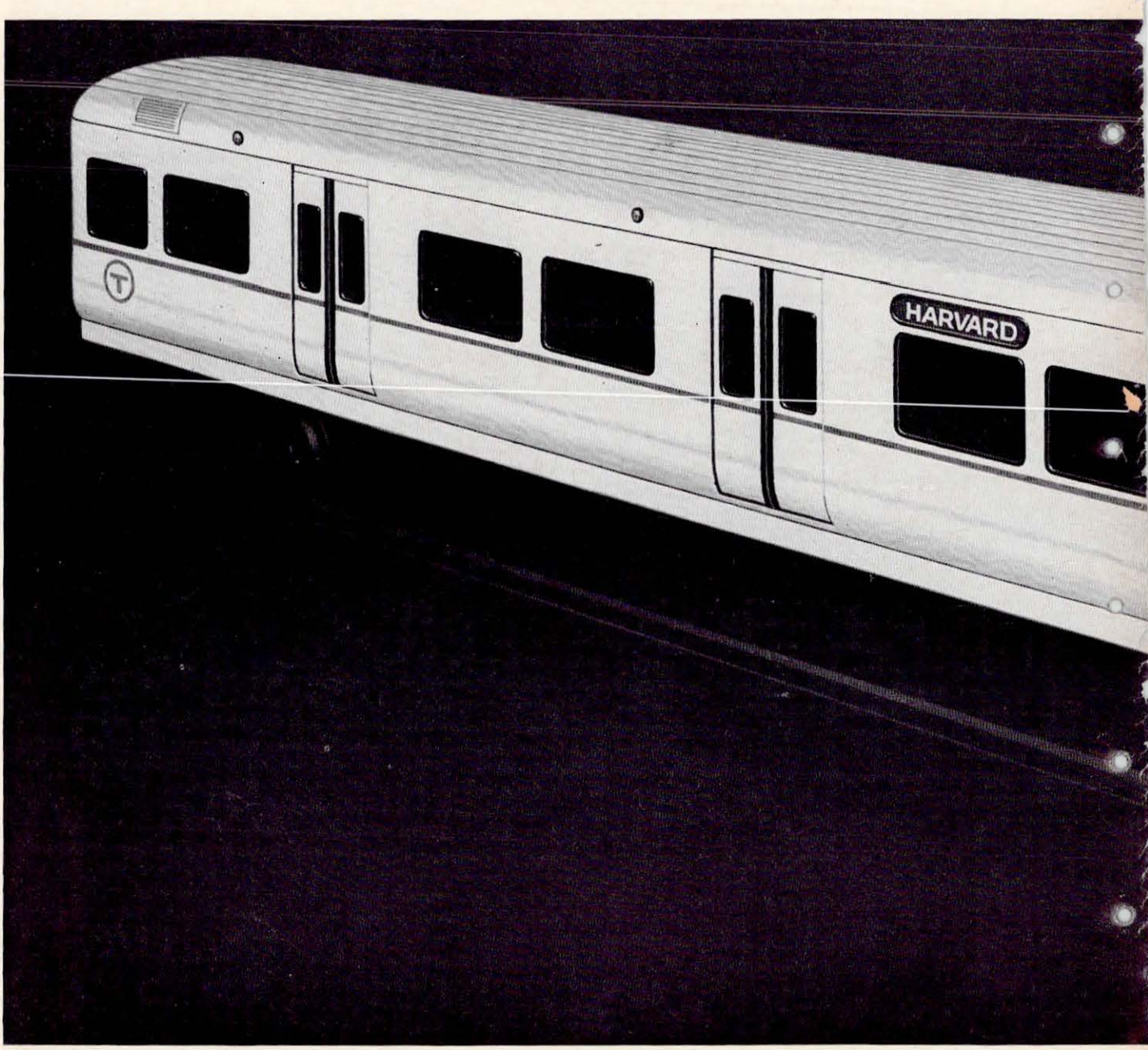

The Massachusetts Bay Transit Authority car, shown below, is one of 76 ordered for the greater Boston area. This car, the first of its kind in the U.S., will feature a gleaming, satin-smooth, brushed aluminum exterior developed jointly by Alcoa and Pullman-Standard specifically for the transit industry.

The warm natural tones of aluminum will offer an added measure of commuter-pleasing beauty to these cars.

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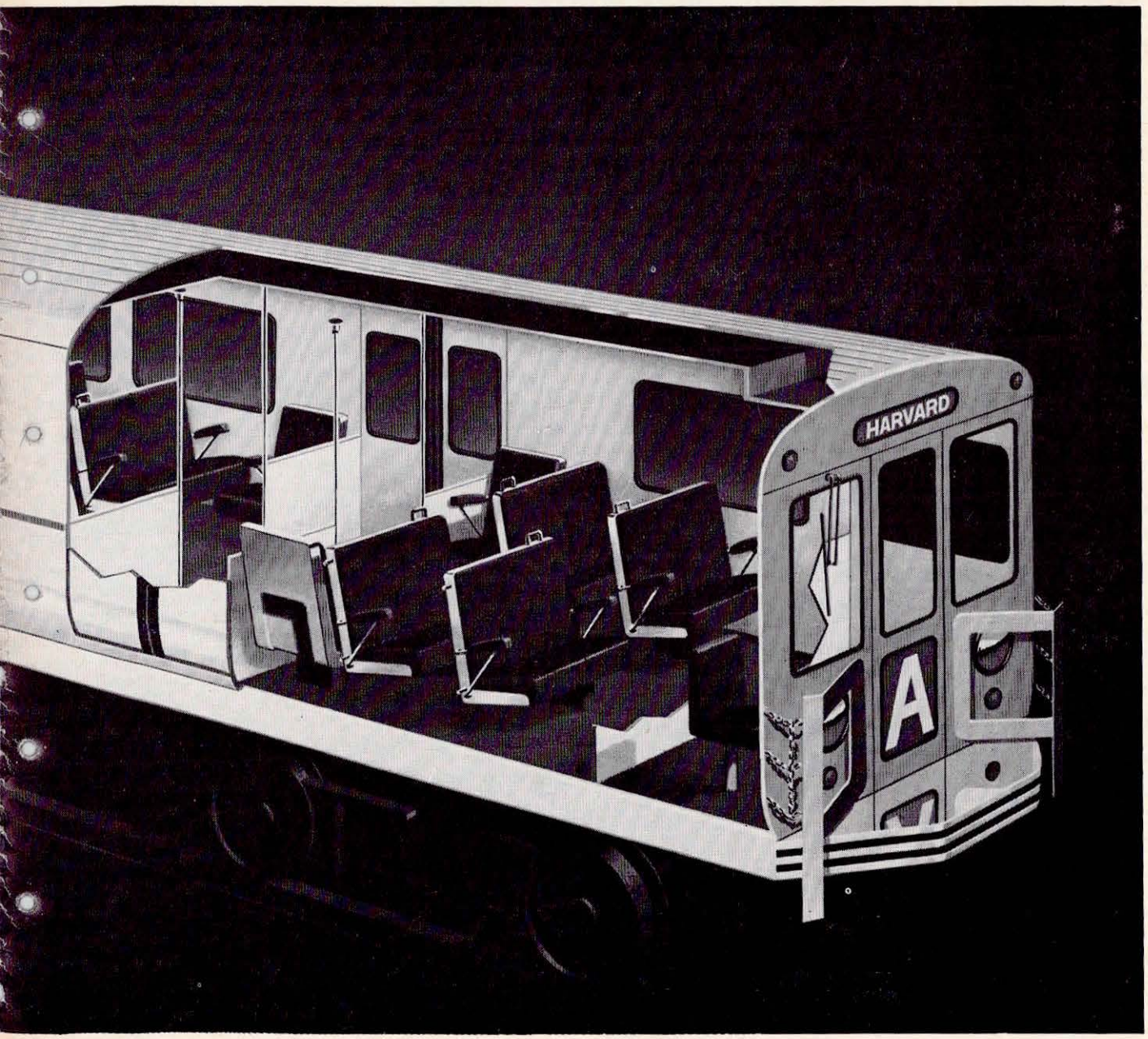


Circle 6 on coupon page 31

RAILWAY AGE
THE TRANSPORTATION WEEKLY
May 5, 1969

GE makes tracks in ground transport

Two DOT research projects in high-speed ground transport have been announced by General Electric—one completed, one just commissioned.

The completed one was the preliminary design concept for a tracked air cushion vehicle capable of 300-mph speeds and introduction in revenue passenger service by 1975.

The vehicle thus conceived would be supported one-half inch above a guide way, weigh 40,000 lb fully loaded, and have dimensions of 53 x 15 x 9.5 ft.

Just awarded to the same firm was a contract to develop a system of power collection by sliding contact methods for high speed ground vehicles at speeds up to 300 mph.

The two projects may dovetail: It was pointed out that a prime potential application of the collection system might be with the TACV referred to above.

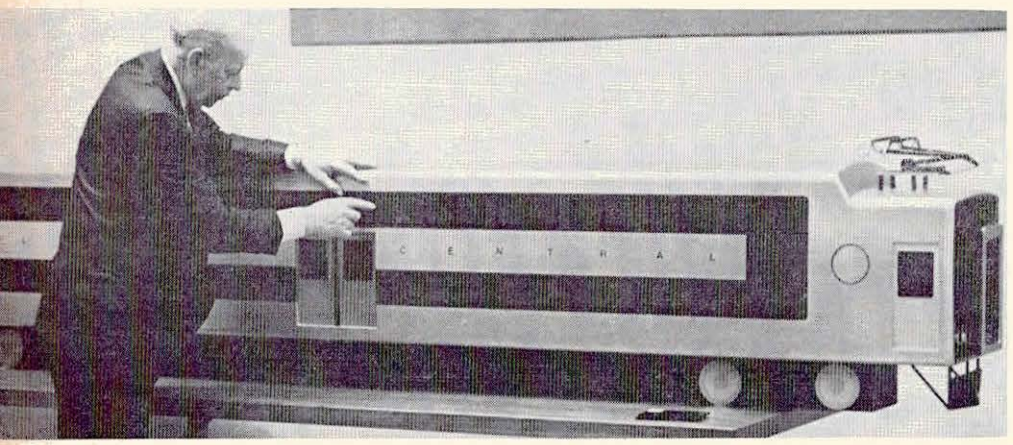
WEEK AT A GLANCE

TurboTrains for upstate New York?

Two demonstration runs of United Aircraft TurboTrains—between Buffalo and Albany and New York City and Albany—led state legislators to call for exploring their feasibility in regular revenue service.

Sen. Edward Speno, chairman of the legislature's joint transportation committee, led the lawmakers' group in praising the trains, the Penn Central for use of its tracks, the railroad brotherhoods for donating their services, and the Department of Transportation for borrowing the train from New York-Boston service for the occasion.

New car design approved for IC's Chicago-area commuters



MODEL OF NEW CAR is inspected by Illinois Central Mechanical Engineer R.J. Chinn.

This is the look of the future, for Illinois Central's Chicago-area commuters. By mid-1970, hopefully, they'll be riding in air-conditioned double-deck coaches, built to this exterior and interior design as developed by Sundberg-Ferar, Inc. Trustees of the Chicago South Suburban Mass Transit District have approved the design for the 130-car fleet; bid documents are now being prepared. And the look of the future will be colorful: Seat coverings will be done in New Gold and Mandarin Orange, walls and ceilings will be done in Cream Beige and Camel Tan, accented by vertical panels of wood grain laminate. Exterior color will depend upon the material selected for car construction. Each of the 85-foot cars will have seating capacity for 158 passengers. Richard W. Austin, CSSMTD chairman, said Sundberg-Ferar worked with specifications "suggested by their own experts, the district's trustees, the railroad and others. And the result is a car design that will be striking and unique."

Outlook for the tax credit: Call it murky

For a couple of key reasons—extremely low rate of return, paired with a need for tremendous capital investment—railroads present a special case, in Congressional consideration of repeal of the 7% investment tax credit. Whether railroads are recognized as a special case—that's another matter.

With other elements of tax policy up for consideration last week, it seemed likely that the tax credit might not come to a critical point before the week of May 12. In the meantime, Washington observers indicated that (a) hope remains for some favorable consideration but (b) the securing of an exemption for any industry may be most difficult. Observers close to the railroad scene found the Administration's repeal proposal hard to understand. One called the move a "sharp shift in . . . policy due to heavy political and economic pressure." Only a week earlier, it was recalled, a top advisor to the President had indicated that the Administration preferred budget and monetary controls as means of braking inflation.

When the call for repeal came, AAR President Thomas M. Goodfellow called it "particularly disturbing to the railroad industry." The Transportation Association of America urged Congress to retain the credit for those transportation carriers whose rates and services are regulated in the public interest. Just about everybody hailed the Administration's determination to curb inflation. But, as TAA President Harold F. Hammond put it, "we are greatly concerned that repeal of the investment tax credit for regulated transportation carriers will result in more harm than good to the general public." Going even further, Hammond pointed to a lowering of rate levels by heavy investment carriers and called the credit "a key element in this 'counter-inflationary' contribution to the economy."

GUS WELTY

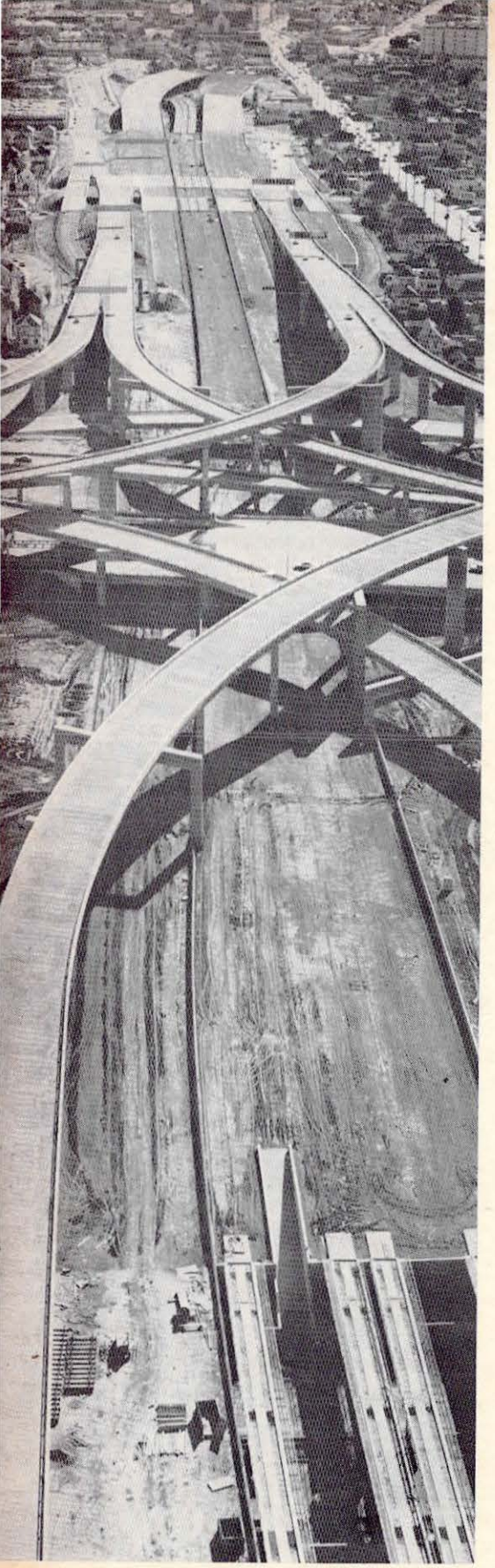
LINES ON LABOR

ONE OF THE ADVANTAGES of moving your office every five years or so is that it presents a tremendous opportunity for bestowing upon the trashman great stacks of useless paper—the accumulation in the files which reflects the fact that editors are just naturally savers. Still, advantage or not, file-cleaning has its traumatic aspects. And, no doubt, he who fills the trash bin to overflowing will live to regret at least some of his "don't save" decisions. The world, for instance, may never see written the definitive history of the work-rules struggle (from this viewer's vantage point), because the "new" files just don't contain all those pieces of paper—yellow and dusty—that had been building up since 1959.

THEN AGAIN, YOU MIGHT SAY that he who lives by the file dies by the file. And, in moments of sad contemplation, you wonder what would be the result if railroad people were able to get rid of the accumulation of the ages as easily as an editor or reporter can. What would happen, for instance, if railroad labor-relations people could dump out the contents of every single file-drawer and start fresh?

UNION PEOPLE would scream with anguish and anger, at the thought of wiping away all their hard-won "gains." Some management people, probably, would also be less than happy. The precedents built up over decades, the agreements made and amended and amended and amended—all these may be cumbersome, inflexible, totally out of touch with the times. But they are a framework, and some folks might prefer even the worst of frameworks to the challenge of starting all over again.

BUT WHAT IF? Just for argument, what if? First of all, new agreements would be written in a way that would permit greater flexibility in use of personnel. Railroads would wind up with fewer employees. The employees would wind up with fatter paychecks and improved benefits. Most likely, the unions—for reasons of economy and strength—would merge down to maybe three. Almost certainly, labor economies would permit development of new shipper services. The end result should be increased revenues, improved financial capability, more jobs at better-paying levels. But of course, it's all a dream. The whole idea is impractical, if not impossible. You can't wipe out history. You can't expect union leadership to take a long-range view. You can't expect union people to trade a short-term loss for a long-term gain. Or can you?



MEDIAN STRIP line will run right under this Oakland "spaghetti bowl."

RIDING OUT TO THE BALL PARK will be easy, when the station next to Oakland-

Bay Area Transit

The money problem plaguing BART has at last been solved. BART can now order cars and finish up construction.

Bay Area Rapid Transit has cleared the worst hurdle of all—the money hurdle—and is now heading into the home stretch on construction.

Over a year of jockeying has gone into the campaign to raise an extra $150 million to finish the mammoth BART project. As is well known, $1 billion was available through a local bond issue, plus federal and state aid, to build the 75-mile system.

When it turned out that this was $150 million short of the goal, the search for extra funds began—a search marked by anxiety, acrimony and confusion.

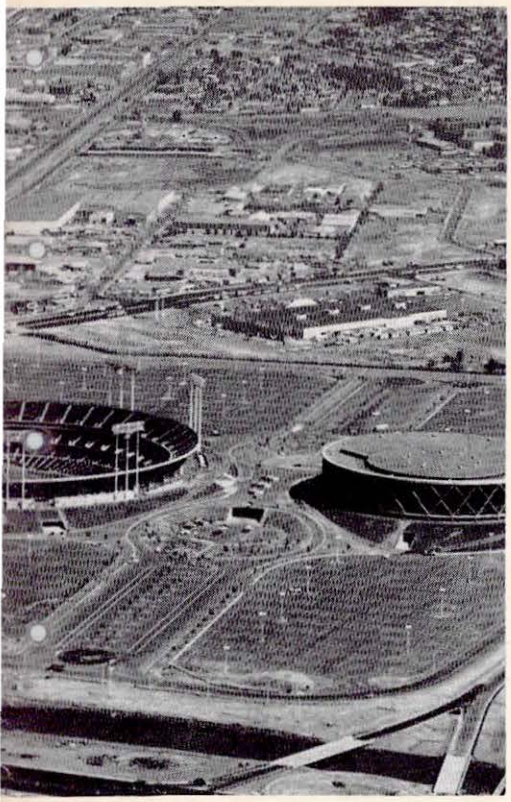
Direct grants from hard-pressed local communities were out of the question. Federal transit aid—which has now mounted to $80 million—is a substantial item, but federal statutes limited the amount that could come from Washington, no matter how important the project.

That left the state to be solicited—and the task wasn't easy. State aid had already been sizable in the form of diversion of Bay Bridge tolls to the tune of $180 million to build BART's Trans-Bay tube.

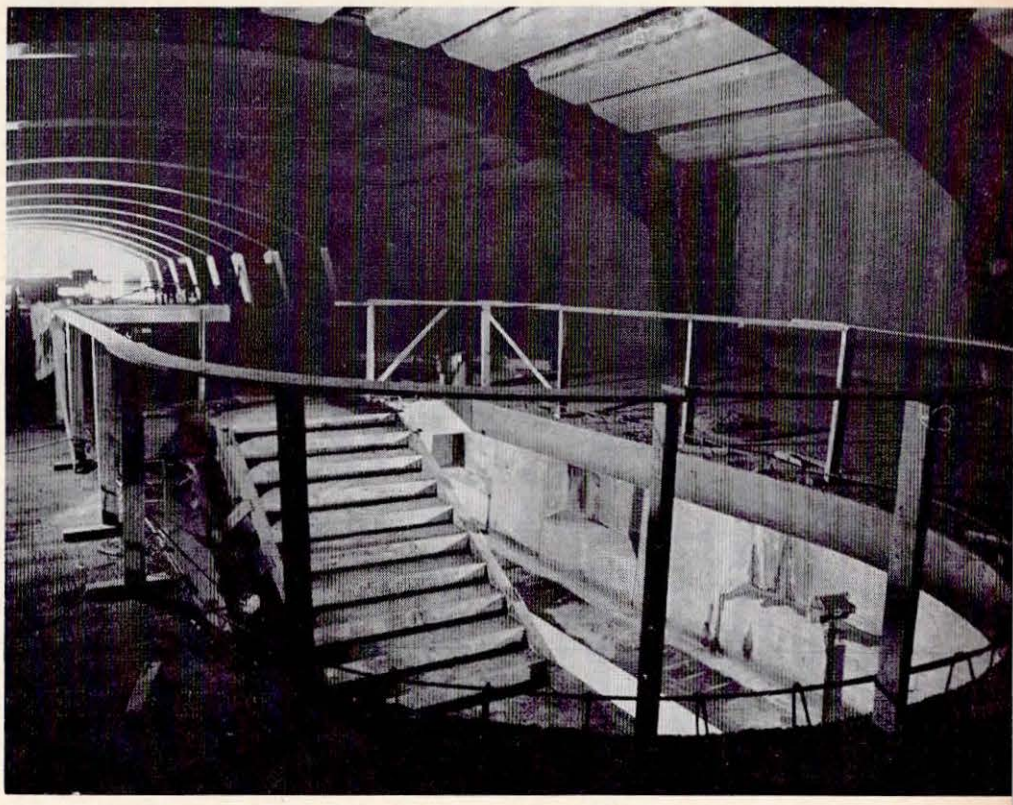
A battle with highway-oriented legislators was the first snag. It soon became clear that neither direct state aid, nor a state-wide tax of any sort could be hoped for from Sacramento.

● **Finding more bucks.** An increase in Bay Bridge tolls was proposed in some quarters, as a means of diverting more money to BART, but Governor Ronald Reagan and others were opposed to this.

The governor appeared cool to BART and its difficulties in his early days of office, but grew steadily more sym-



Alameda County Coliseum Complex is ready.



NEW STATIONS taking shape include this one at Berkeley, now well advanced.

will zoom on to the finish

pathetic as the problem hung on without solution.

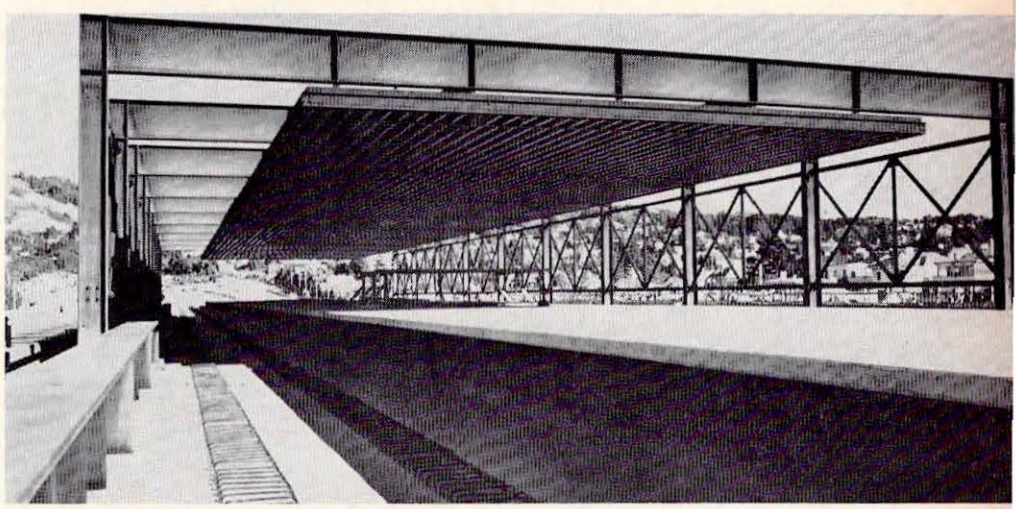
He let it be known that he would support any self-help measure—i.e. local tax—that the Bay Area delegation could agree on among themselves.

The measure they finally got together on was a half-cent increase in the sales tax charge in each of the three Bay Area counties to be served by the BART system.

This measure—passed by both houses of the legislature and signed by the governor last month—is calculated to raise $150 million for BART. It lifts the big project out of its monetary bind, and assures that construction will go on at top speed to completion by mid-1971 or early 1972.

● **Caught in the middle.** The months leading up to passage of this bill were anxious ones for the BART management and engineering staff. Plenty of construction was going on—but with no guarantee that anything more than holes in the ground would result.

The engineering staff had prepared



DESIGN AND ENVIRONMENTAL ASPECTS get attention, along with engineering, as here at partly finished Rockridge station in North Oakland. Respected architects and consultants played a role in designing stations for ease of access and amenity.

BART AS AN ECONOMIC CATALYST: Minority groups comprise over 33% of the 3600-man labor force on the BART system—and it's predicted that BART will revolutionize ghetto access to job locations. But BART's leverage as an employer actually goes much further: That $875 million in contracts has a multiplier effect among suppliers of equipment and services in creating jobs, spreading prosperity.

a number of contingency plans—either a truncated system at first, with the rest of it to follow in phases, or a system scaled down in styling and standards, and therefore in costs.

Local resistance to both those propositions turned out to be important playing cards in the hands of BART, in the search for more money.

It was repeatedly pointed out that the villain of the piece was nobody but inflation—and if the system was to deliver on the promised standards of style and performance, the extra money had to be raised.

Raised it is, and design and construction work can now go forward without the threat of either interruption or dilution of quality.

● **Car fleet.** Not least important, the decision on car-buying can at long last be made. Under BART statutes, general obligation bonds finance construction, and revenue bonds finance the car fleet. Without assurance that the system would be completed—i.e. assurance of revenue—bonds to finance the vehicles could not be floated.

Car mockups were shown more than three year ago, and preliminary specification have been known almost that long—but bidding was held off.

Now that the risk of halting construction is removed, the management and engineering staff can get on with car-buying. As reported earlier, a tender on 250 cars—10 prototypes and 240 production vehicles—is out for bidding, with a June 3 deadline.

● **Progress report.** At the present time, design of the BART system is 93% complete, and construction is 49% finished. Right of way is 88% acquired, 72% of the dollar value of contracts has been awarded, and another 7% advertised.

Construction work involves 235 contracts worth $875 million. Of these, 64, worth $135 million are largely complete, and another 71 contracts worth $515 million, are being carried out. Another 100 with a value of $225 million, will now get under way.

Contractors have almost 3,600 men working on-site in construction jobs. The Parsons-Brinckerhoff-Tudor-Bechtel joint venture consultants have a field force of 265 monitoring the work.

The consultants report that contracts have generally kept very close to cost estimates, and in some cases come in below them. ■

BART success formula has chief chemist

Pipe-smoking, genial Bill R. Stokes, general manager of BART, may have an image problem in reverse: He comes on so mild-mannered and agreeable that his critics have to learn the hard way how tough he is.

In 1962, when Bay Area voters approved the $792-million bond issue that got the BART project started, a few angry citizens brought a tax-payers' suit, alleging BART was an illegal enterprise, and anyway was mismanaged.

In due course, the suit was thrown out of court—chalk up one for Stokes.

The 1964-65 period was taken up with development and testing to make BART the most sophisticated transit system in the world—chalk up two for Stokes.

But the year-long tax-payer's suit had one time-bomb aspect: Precious time was lost during an inflationary period in getting started, and it developed that BART's cost estimates for construction were too low.

The year 1966 may have been the roughest of all: On the one hand, the

search for an extra $150 million began. On the other, Stokes had to contend with a powerful local newspaper which chose this time to launch a series of articles "exposing" BART as a hoax and a boondoggle.

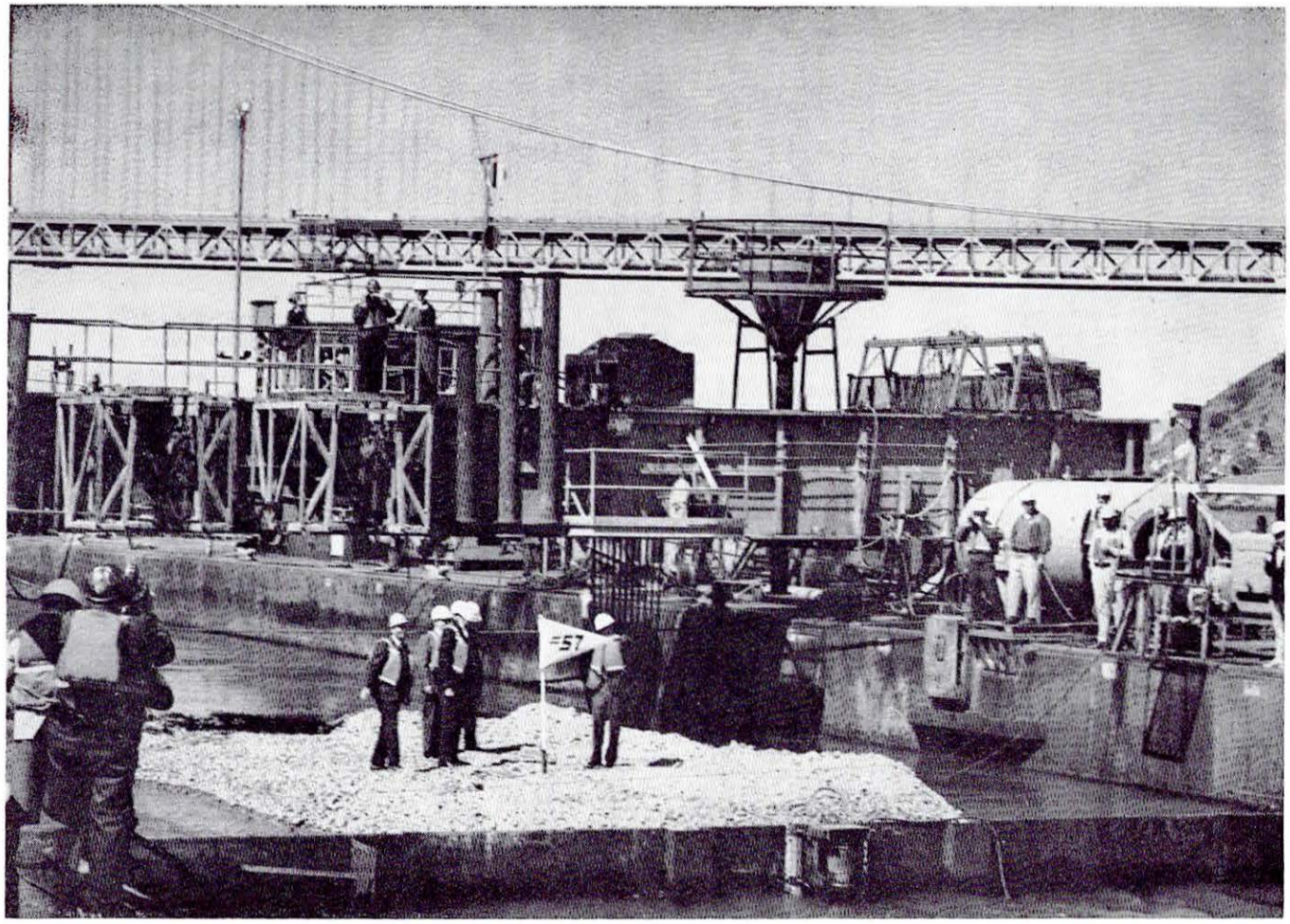
Stokes had two storms to ride out, not one, but he kept his cool. He prepared detailed memoranda for his board and for powerful leaders of all sections of the community, spelling out all his actions and plans—and showed that the newspaper series was concocted of half-truths and hearsay.

The mayor of San Francisco and the community opinion leaders bought Stokes' version, not the other one.

But the ordeal was not over. While construction of BART was already in high gear in the 1967-68 period, there was no guarantee it would be finished unless another $150 million could be found.

Stokes impressed on the Bay Area delegation to the legislature that this was their fight as well as his, won Gov. Reagan and the state administration to the cause, and emerged a month ago with victory in the form of a state law to raise the needed $150 million.

An old charge brought against Stokes was that, as a former reporter and public relations man, he lacked administrative experience to run a billion-dollar project such as BART. It's unlikely that charge will ever be brought up again. — **J. A.**



FINAL 328-FT SECTION—the 57th—is submerged in place to finish laying of the 3.6-mile two-track Trans-Bay tube.

BART:

Big milestones reached in building

The next major phase of BART construction begins, now that the tube under the bay is finished, and track laying commences.

Three big milestones in the billion-dollar BART construction job are being marked:

—The tube under San Francisco Bay is now in place.

—Track-laying has begun.

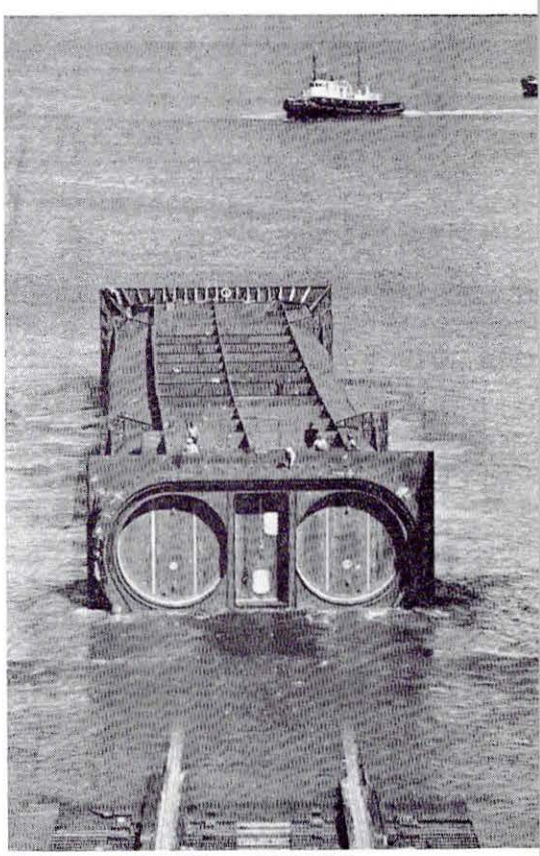
—The core of the automatic train control system has been delivered.

The 57th and final section of the 3.6-mile double-track underwater transit tube was maneuvered into position on April 3. The Trans-Bay Tube will permit trains to travel between downtown San Francisco and Oakland in just nine minutes.

The hollow steel sections were fabricated at the Bethlehem Shipyard in San Francisco, then lined with concrete and floated individually to the construction site.

● **Location by laser.** The weight of the sections was carefully calculated so that, with the addition of several hundred tons of topside gravel ballast, they would sink easily to the floor of the bay.

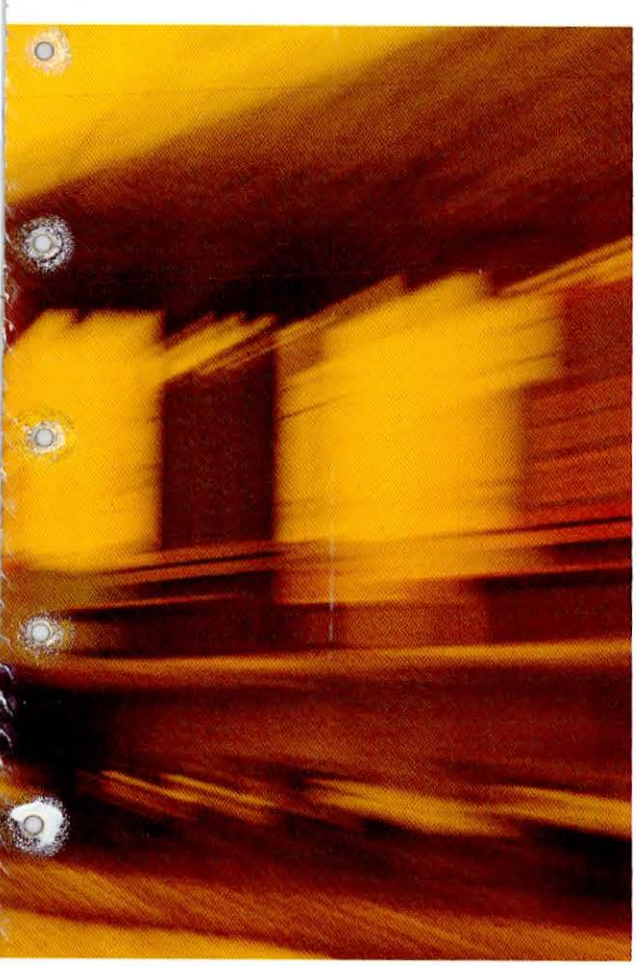
Precise positioning of the tube sections was accomplished through use of special laser instruments, as well as removable metal survey towers



BINOCULAR-SHAPED SECTIONS were floated out from San Francisco shore.

We've got the cars that make transit systems rapid.

And we've got the systems, too.



There's more to building a transit car than designing in carbon steel, stainless or aluminum. And more than engineering it to basic specifications.

It takes an understanding of systems.

With its affiliate divisions, Pullman-Standard engineers can participate in every aspect of rapid transit systems development, including traffic studies, interface analysis, route planning, civil engineering, operations, maintenance, and even automation.

This experience results in the finest cars for existing or planned systems. It's why you'll find Pullman-Standard cars on the country's most successful systems, from commuter runs to subway lines to airport service.

Before you settle on a car, make sure it's right for your service. Before you settle on a system, see us.

Pullman-Standard
WORLD'S LARGEST RAIL CAR MAKER
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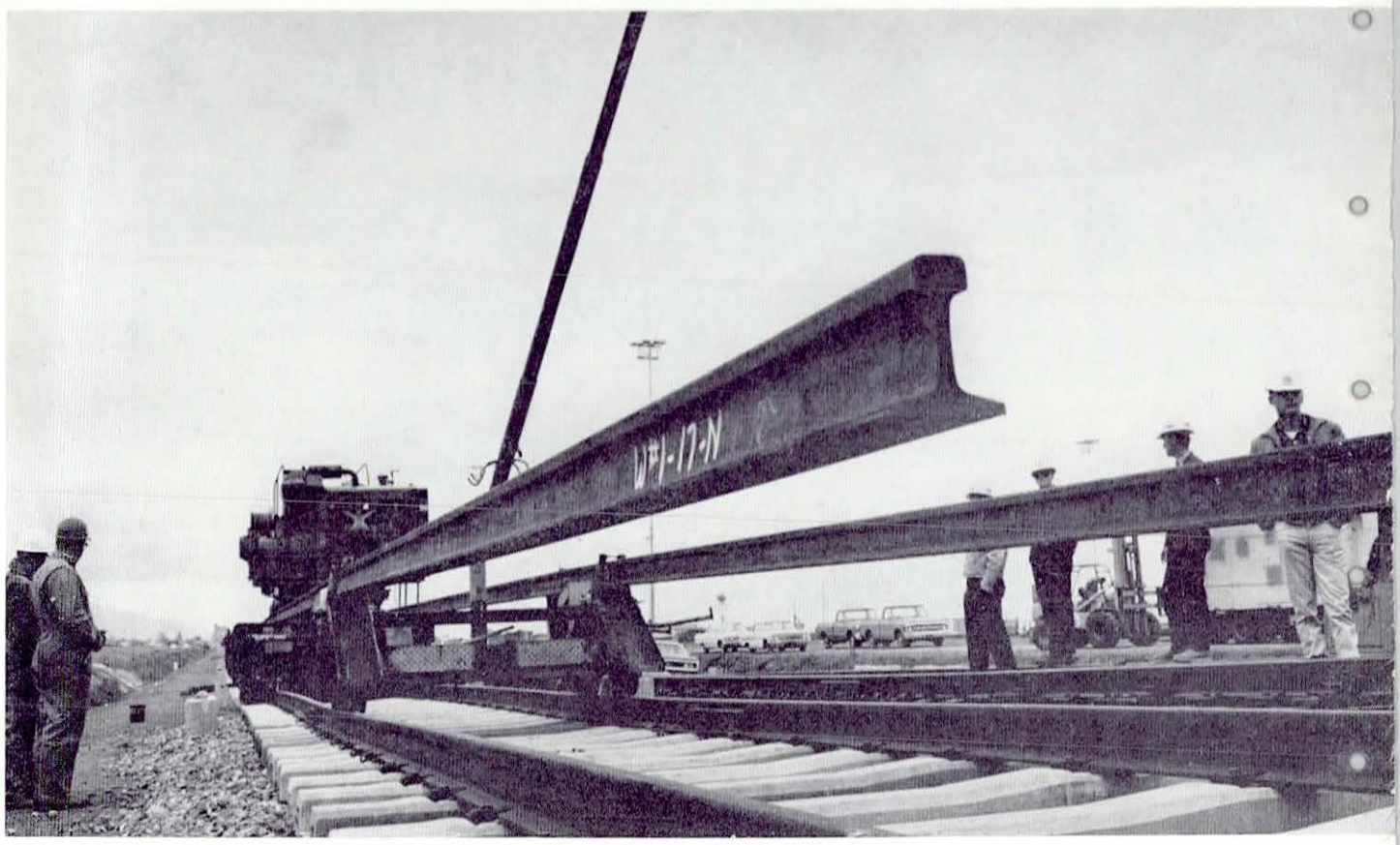


FIRST TRACK-LAYING
Continuous-welded rail in 1,518-ft lengths is installed on concrete ties, initially on the Hayward-Oakland stretch.

mounted atop each of the sections.

The final tube section provided a link between the previously constructed portions of the tube which extend outward more than 1.5 miles from the San Francisco and Oakland shorelines.

Weighing over 10,000 lb and measuring 328 ft in length, the section was floated to the site by a catamaran-shaped barge. It was then lowered and carefully positioned between its two neighboring sections in the bottom of a pre-dredged trench 100 ft below the surface of the water.

The 56 sections previously installed were attached initially by temporary rubber gaskets and hydraulic couplers. Later the sections will be joined together by placement of a thick exterior concrete collar. All tube joints, however, are subsequently sealed from the inside by concreting and interior welding. And the tube is additionally protected on the outside by a layer of backfill.

● **Seismic joints provided.** Special flexible seismic joints—equipped with teflon-coated sliding surfaces—have been installed at each end of the tube. They will allow it to move several inches in any direction with respect to its more rigid shoreline ventilation structures.

Maximum Depth: 135 ft.

The Trans-Bay Tube, which measures 24 ft by 48 ft, contains separate ducts for ventilation and access to utilities, in addition to the two tracks. At its deepest point, the tube rests nearly 135 ft below the surface of the water.

Designer of the tube was Parsons, Brinckerhoff, Quade & Douglas of New York. Construction is by a joint venture group of four marine construction firms working under a $90-million contract awarded by BART.

● **Track-laying.** Coincidental with the finishing of the tube was the first installation of main-line track on the BART system.

Contractor for the first 23 miles of the 75-mile system is the Dravo Corp., which began on the section of line at Hayward, extending northward to the Lake Merritt subway station in Oakland. Half of this mileage is at grade or in subway (cover photo), the other half on aerial structures.

Rails are long-welded in 1,518-ft lengths at the Southern Pacific's Tracy shops and brought to the track-laying site on flatcars. The rail, supplied by Colorado Fuel & Iron, is laid on rock ballast. A Matisa tamper-leveller-liner is used.

The Dravo contract covers 104.6 miles of rail, including mileage at the Hayward yard, plus 48,000 concrete ties, 122,000-cu-yd of rock ballast and 88,000 rail fasteners. Ben. C. Gerwick is supplying the ties; Landis Sales, the rail fasteners and pads.

● **Third rail.** Novel features lie in the design of the third rail and contact rail current collectors.

Rather than conventional steel rail, Kaiser is supplying BART with a light weight composite steel/aluminum design, weighing 38 lb/yd, in which steel

provides the structural strength and shoe-contact surface. Aluminum sections on either side of the web carry the current. The contact rail protector is a curved plywood sheet coated with glass fiber and plastic.

There are to be four collector shoes per car picking up 1000-v dc current from the third rail. Problems this poses lie in achieving compactness, light weight and adaptability for high-speed operation, without sacrificing insulating qualities in an atmosphere susceptible to severe contamination.

The DynaGlide contact-rail current collector, developed by Ohio Brass with the aid of high-speed photography of the dynamic action of shoe collection, achieves a considerable weight saving—under 40 lb compared with a normal weight three or four times higher.

Insulated support brackets of many different materials were investigated before settling on a compression-molded glass-reinforced plastic design.

The automatic train control system for BART is the responsibility of Westinghouse Electric, which won the contract over four other contenders. Westinghouse is now making delivery of important equipment items for the system.

Chief items delivered to the construction site were the central control facility including central computer and accessory equipment, and display panel console. The latter was supplied by Transistor Electronics under sub-contract to Westinghouse.

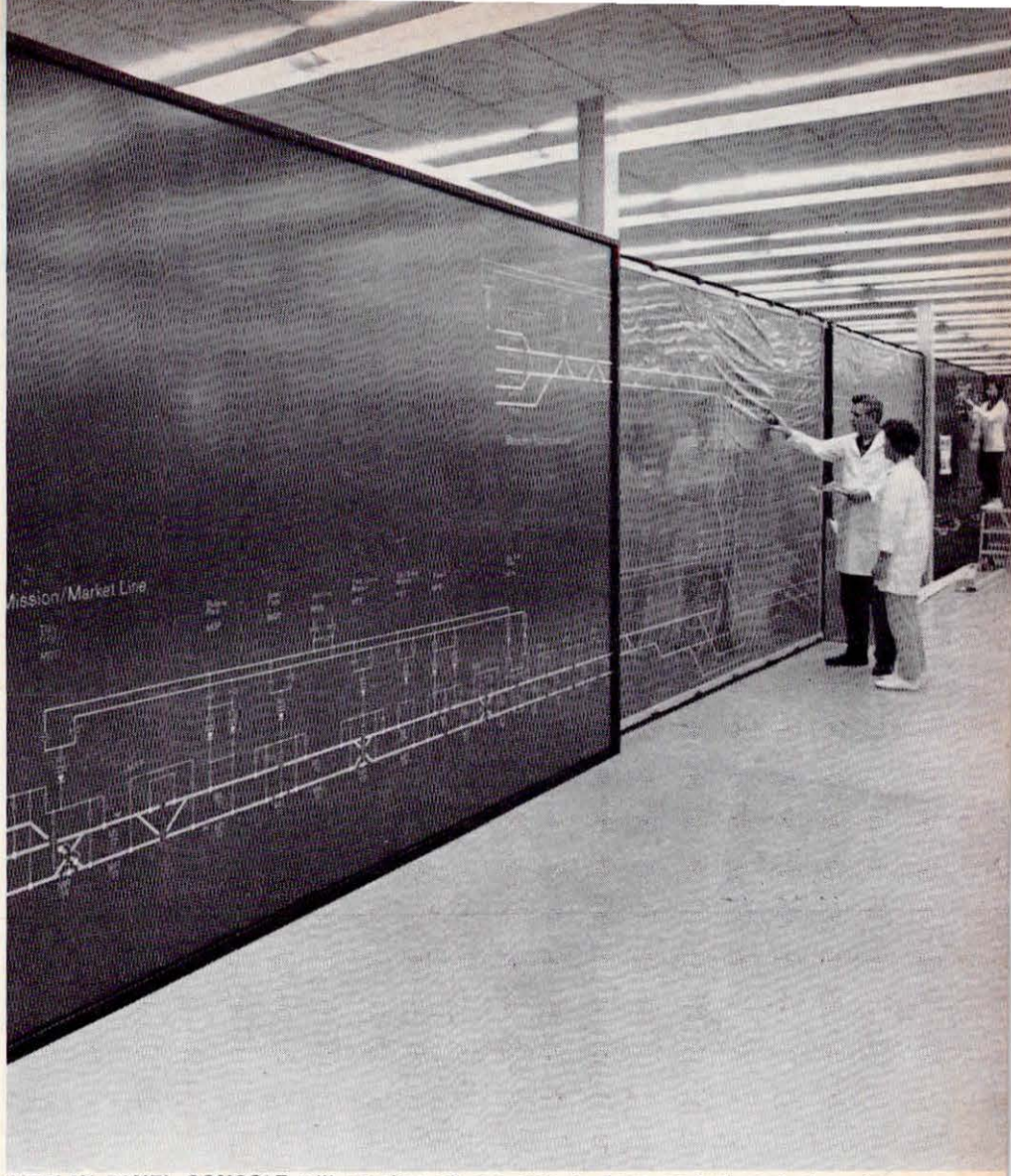
Cable-laying for the train-control system is going on at the present time. Wayside and station equipment will be installed probably later this year.

The train control system is designed to provide speed control and train separation, and also deceleration to full train stop within ± 5 ft of target at a station platform.

In the block system used, coded track circuits detect occupancy of a block and then issue speed commands.

For station stopping, cables are laid between the track in station areas. An antenna on the train senses a cross-over in the cable conductors, and a stored program computes distance to the stop, and brakes the train smoothly.

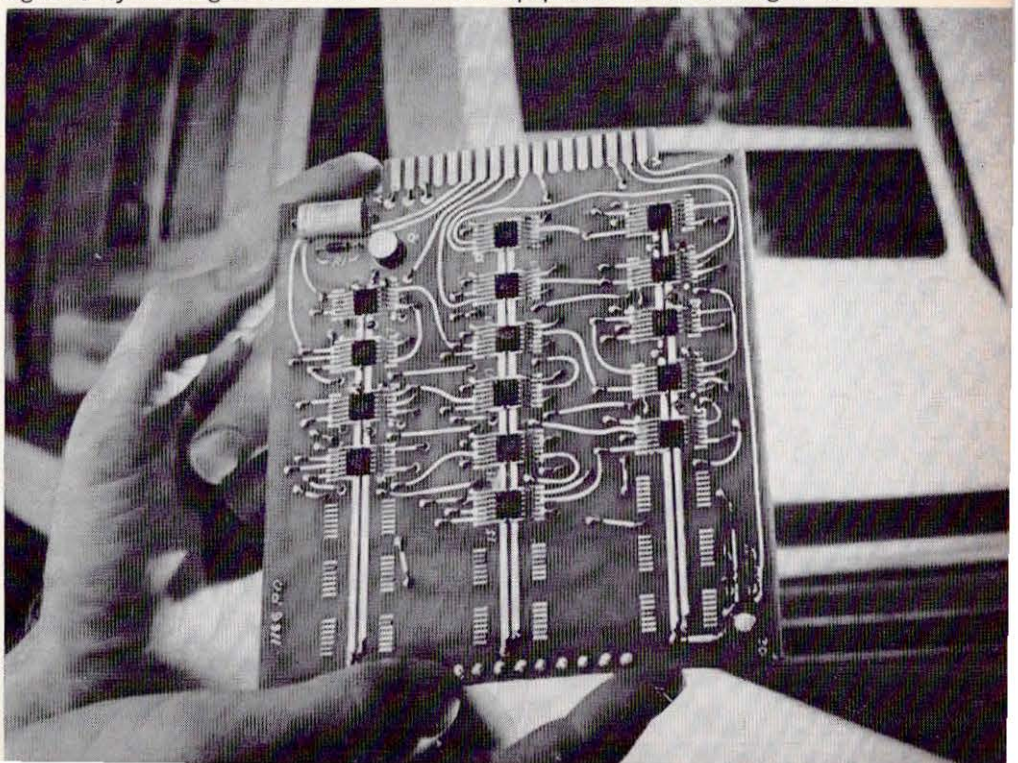
Important economies are said to arise from the extensive use of off-the-shelf integrated circuits in this system, as well as the design of a digital multiplexing system with solid-state gates that take the place of conventional relays. ■



DISPLAY PANEL CONSOLE will monitor all movements from central control center for BART in Oakland. The sub-contractor just delivered it to the job site.

TRAIN CONTROL SYSTEM TAKES SHAPE

INTEGRATED CIRCUITS are at the heart of the automatic train control system designated by Westinghouse Electric for BART. Equipment is now arriving on site.



Joseph Asher's

TRANSIT ROUNDUP

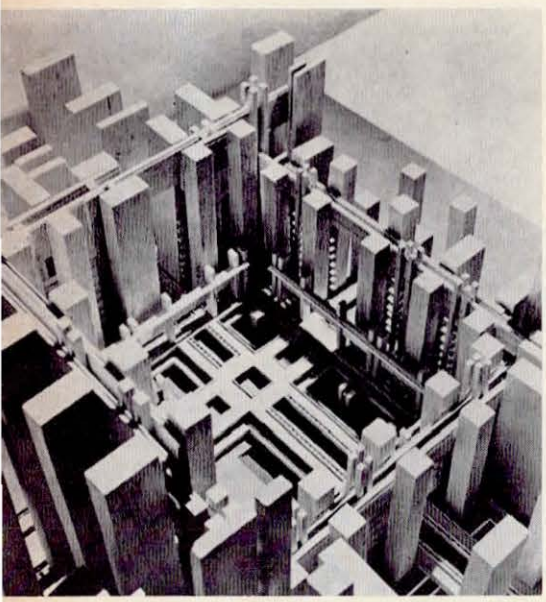
DOT sources indicated President Nixon's pledge to work for a transit trust fund will be redeemed some time this month. That's when they expect to have ready the proposed legislation setting up a trust fund on the order of the highway trust fund. Financing source would be either auto excise taxes (which now go into general revenues) or cigarette taxes.

Transit leaders have generally been sympathetic to the Williams-Patman bill, introduced earlier this year, which covers roughly the same territory (RA, March 3, p. 19).

A more drastic version of the same thing sponsored by Rep. Edward Koch (D-N.Y.) has aroused apprehensions that it is too favorable to big cities to have a realistic chance in Congress.

Surprisingly, though, Congressman Koch was able to round up signatures of 44 other congressmen on a statement endorsing his bill.

LOOP EL PLAN: Mayor Richard Daley of Chicago is reported to be ready to ask for creation of a special tax district in downtown Chicago, as the main source of financing construction of the new Loop underground system for the Chicago Transit Authority.



TRANSIT ROOTS, CITY TREE

An "access tree" is the concept advanced by New York's Regional Plan Association to cope with downtown density. Office buildings are clustered around plazas, not strung out on avenues, and office-block-access is strongly related to underground transportation systems.

DRPA MAY GROW: Delaware River Port Authority officials commissioned a $24,000 study from Simpson & Curtain to determine feasibility of extending their new line to Willingboro and Glassboro.

In the past, DRPA officials have spoken of the present line as just the beginning of a potential network reaching large segments of southern New Jersey—even Atlantic City.

DELAYS IN NEW YORK: A dispute between New York City officials and representatives of the Metropolitan Transportation Authority is flaring out in the open. It may delay construction of new subway and commuter facilities for which financing is available through last year's state bond issue.

City officials claim MTA reserves to itself too many planning prerogatives; MTA men counter that the Board of Estimate and City Planning Commission "sit on" projects, instead of moving them through the pipeline.

The upshot is that detailed designs for the new East River tunnel are still not ready to go out for bidding. The best estimate of when construction of the forthcoming Second Ave. subway could get going is around the end of the year.

WASHINGTON METRO WAITS: If Congress approves an Administration request for $18.7 million for the Washington Metropolitan Area Transit Authority, construction could start on the 97.7-mile system within 75 days, according to Jackson Graham, WMATA general manager.

Testifying before a Senate appropriations subcommittee, Mr. Graham said that if the money were appropriated, it would free other federal and local matching funds already available.

Work started on that schedule would lead to "initiation of train operations by the end of 1972, completion of the basic system in 1974, and completion of the regional systems by 1980."

DOT GRANTS: A $40,000 grant to the Southeastern Michigan Transportation Authority will be used to study ways of improving access to suburban jobs for inner-city residents. This includes improvements to rail commuter service—on the GTW between Detroit and Pontiac; on the Penn Central between Detroit and Ann Arbor.

A $29,720 study will be made jointly with the Department of Health, Education and Welfare on the effect of reducing transit fares for the elderly. The Illinois Institute of Technology will carry out research aspects.

A $92,000 grant to Fenix and Scisson will be used to study improved methods of soft-ground tunnelling for transportation systems.

HONORS FOR TRANSIT MEN: Two men connected with transit figure among the Top Ten Public Works Men of the Year. The awards, made jointly by the American Public Works Association and Kiwanis International, will be presented during National Public Works Week, May 11-17.

The two are David G. Hammond, director of development and operations for the Bay Area Rapid Transit project; and Milton Pikarsky, Commissioner of Public works, city of Chicago, who has been closely connected with median-strip planning, the "Northwest Passage" in cooperation with the C&NW, and plans for the new Loop subway.

CAR ORDERS AND DELIVERIES: Illinois Central now has approval of the $25.2-million grant from DOT toward purchase of 130 high-performance commuter cars. An order is expected fairly soon.

Toronto Transit Commission is studying proposals for additional cars for its growing lines. Quantities discussed range between 40 and 100 vehicles.

Two major car orders are getting close to delivery: 150 stainless steel vehicles from Budd for the Chicago Transit Authority, and 76 aluminum cars from Pullman-Standard for the Massachusetts Bay Transportation Authority. Deliveries should start this month or next.

Mentioned elsewhere is the 250-car

order for BART; an announcement on a contract is due next month.

RIO AIMS TO BUILD: Nothing stimulates action like rivalry between cities—Chicago and New York, Montreal and Toronto, Rome and Milan, Barcelona and Madrid, Rio de Janeiro and Sao Paulo.

The last-named is the industrial and commercial center of Brazil, and local authorities are now letting contracts on construction of a rapid transit system.

Rio, the cultural center, is not to be outdone, although financing has been elusive. While they hope to get started letting contracts by July, a more realistic estimate might be later this year.

Bullish steel market seen in transit

The market for steel in the transit field is a strong one, but potentially it is much greater, in the opinion of steel industry representatives.

According to sources at the American Iron and Steel Institute, the potential market for steel in this industry could reach 15 million tons in the 1970s.

There are a number of variables. Starting from calculations made by the Pittsburgh Urban Transit Council, they note that a possible 35 to 40 new transit systems could enter the construction, final engineering or operational stages over the next decade. That averages out to about 20 miles of new system per year.

The steel share in that construction would be a minimum of 5-10 million tons over the next five years—assuming basic steel use of 10,000 tons per mile on the average.

The figure could be much lower, if fewer systems get started. It could also be considerably higher if use of steel in tunnel linings, overhead structures, rails and wheels were more intensive.

The choice of welded steel fabrication for tunnel liners at BART was noted as proof that such uses are fully competitive with other materials and may increase. The BART tunnel liners have a built-in monitoring system to detect corrosion.

● **Noise control.** The same steel men point out what use of steel in constructing transit systems could do to cut noise. A Stanford Research Institute study was cited which reported an overhead structural span can be stiffened at vibration node points to reduce noise levels. A 10-12 decibel reduction in noise levels on a steel overpass, compared to a concrete one, was considered possible, if properly designed.

Frank Malone

WATCHING WASHINGTON

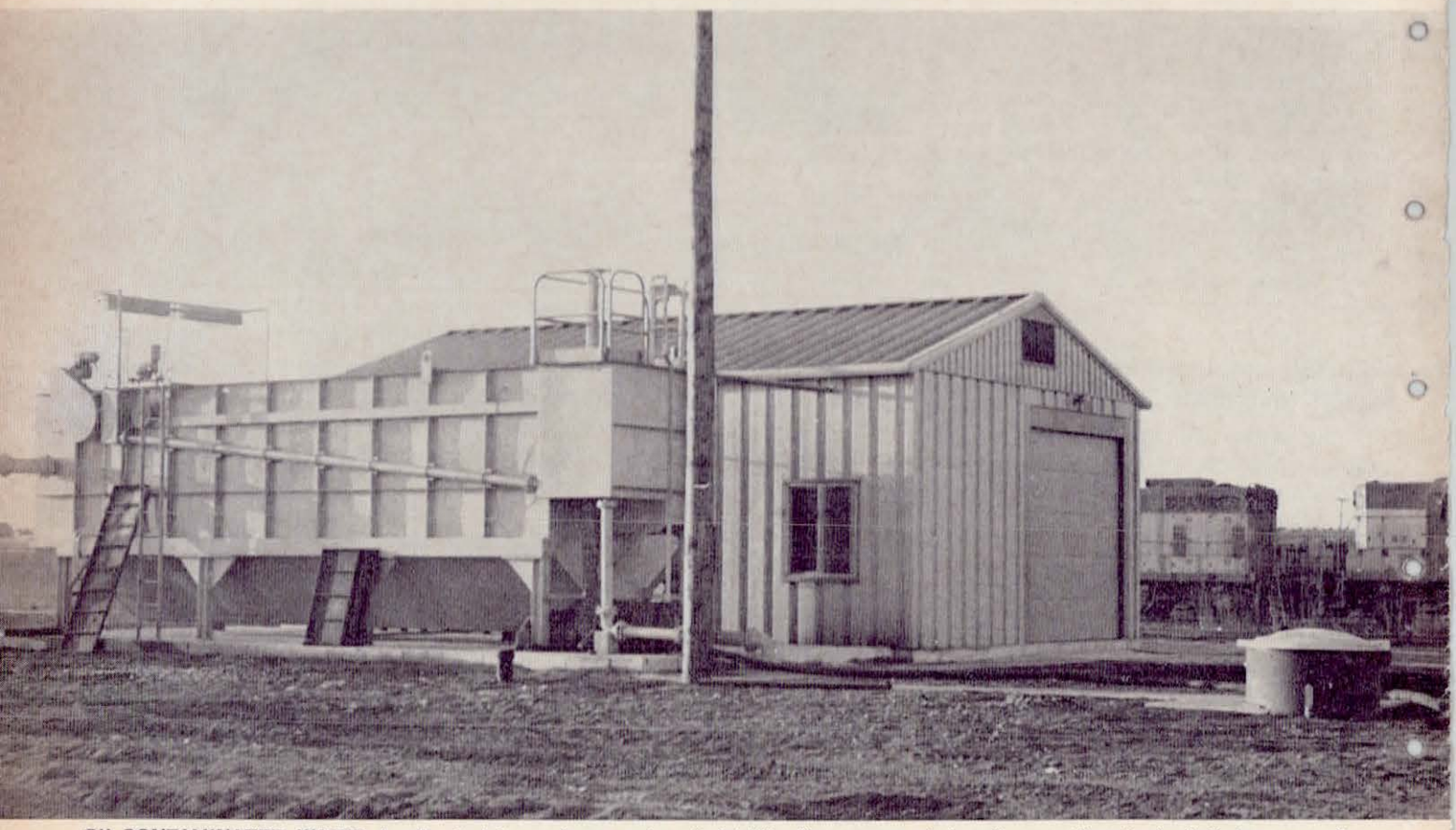
TECHNICIANS at the Justice Department have managed to hold the sleepy rail giant in front of an x-ray machine long enough to get an interesting picture. It seems that some people had been saying the industry was losing its muscle, and the men at Justice wanted to see for themselves. What they found is a bicep that may be a little flabby, but still healthy, as they've always believed. With exercise, they conclude, the railroad industry could become quite a bully on Transport Beach.

THAT POSSIBILITY was overlooked by the Interstate Commerce Commission examiner for the Milwaukee-North Western merger, Justice says, and it shouldn't happen again. The Department wants to prevent mistakes of some consequence in assessing the nature of this case and in deciding future rail cases. Such mistakes, Justice implies, would serve only as further excuse for soft-pedaling the industry's duty toward self-improvement.

LOOK at the rail position with other modes, Justice says. On the long haul, rails still have the advantage and they will keep it because their commodity consist is very wide, while that of trucks is very narrow. Though trucks (barges, too) can substitute for rails on the short haul, they can't otherwise. This statement is backed with ICC statistics and shipper testimony. Justice concludes that "a more complete representation of intermodal competition relationships . . . would show that rail carriers are specialists whose major commodities and major functions differ significantly," from those of other modes.

WHAT JUSTICE tries to prove is that the rail Goliath could be "considerably more competitive than it now is." True, the industry may grow a little more slowly than the total transport market. But it's not necessary "or desirable" that all modes grow equally, Justice says. "We do suggest that . . . rail carriers may expect substantial increases in their traffic levels, if they continue aggressively to improve their services."

IN OTHER WORDS, there's room on the beach for everybody, even though the space may be divided unequally. There is room for strong carriers of different kinds, because there are different needs. But there's no room for a muscleman with a complex that keeps him from kicking up his share of the sand.



OIL-CONTAMINATED WATER is directed to underground well (right), then pumped to oil-separation tank (left foreground).

How the C&NW fights water

Especially designed facility near a diesel shop is used to remove diesel and other oils from waste water before it is released into public waterways.

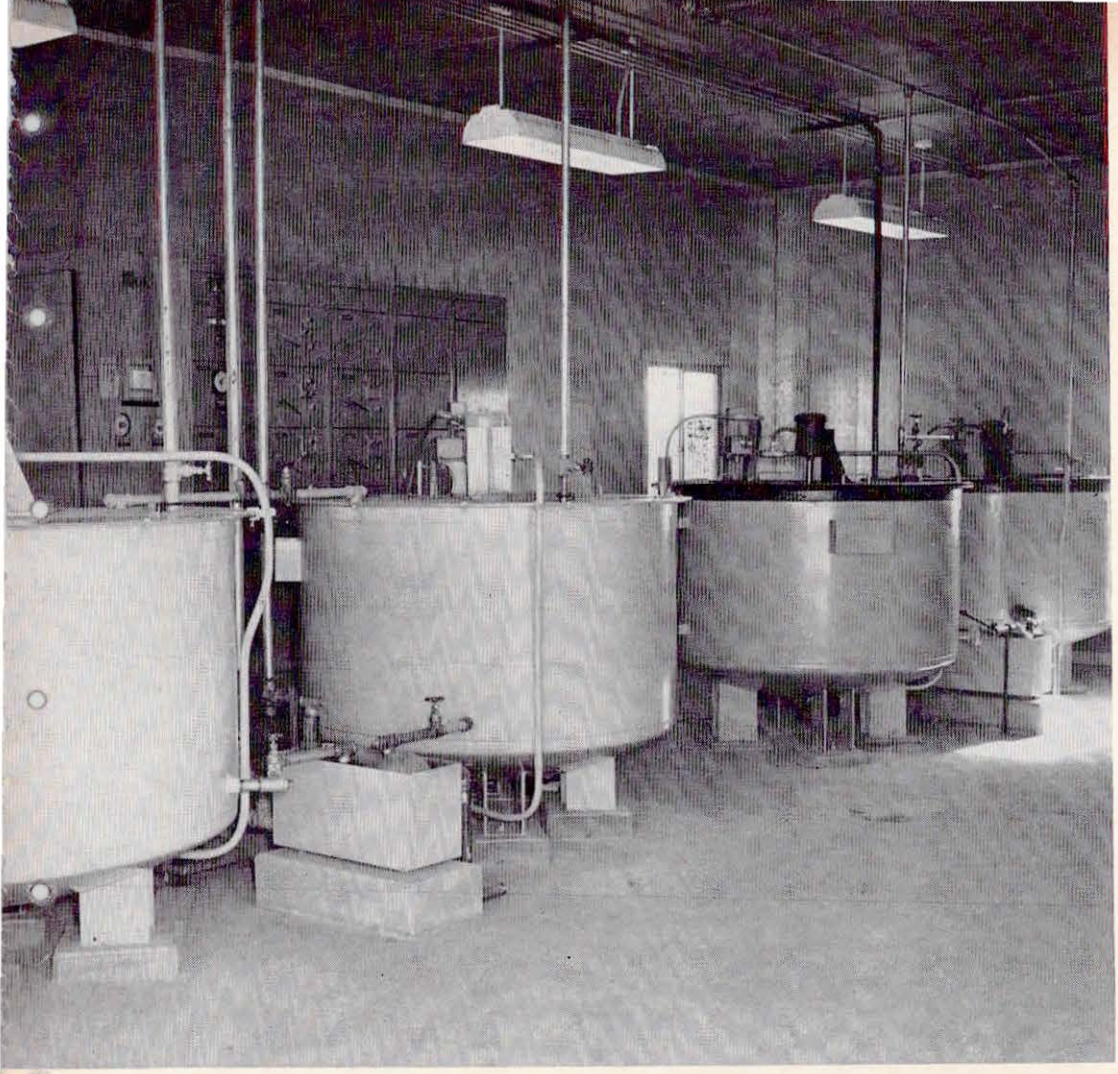
New facilities recently built by the Chicago & North Western at Proviso, Ill., have been hailed as "an excellent example of what an industry can do on its own initiative in fighting the battle of industrial water pollution." The praise came from officers of the Metropolitan Sanitary District of Greater Chicago.

The facilities cost $350,000. They are especially designed to remove diesel and other oils from waste water before it is released into public waterways.

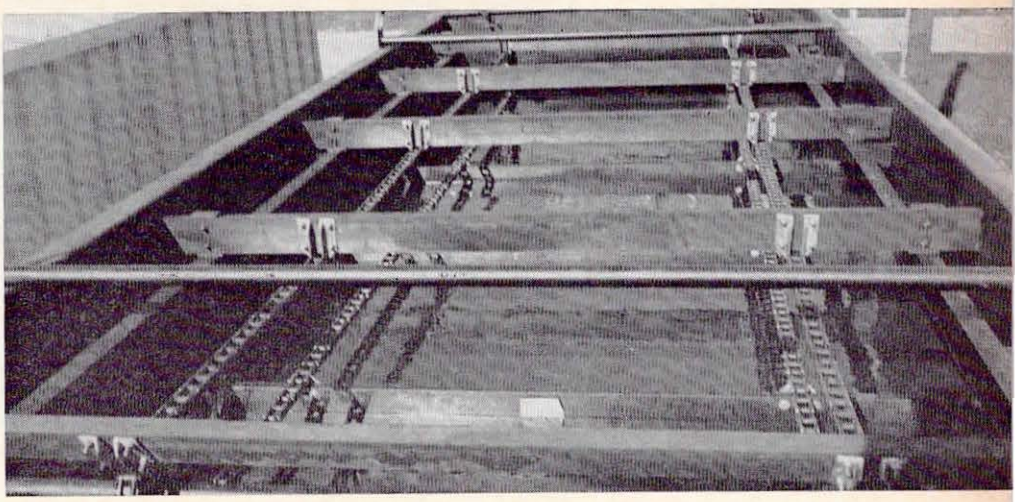
E. W. Knight, the Sanitary District's industrial waste coordinator, and James T. Dencek, supervisor of compliance of the District's industrial waste-control section, were the first public officials to witness the initial operation of the facility. "The entire project," said Knight, "reflects excellent planning to prevent oil-contaminated water from flowing into our streams. I am sure that others concerned with sanitary engineering in railroad and other industries will gain much by studying this operation."

● **Polluting sites.** Three areas outside the diesel shop were the major points where water became contaminated with oil and, either through natural drainage or by means of sewers, got into public waterways. One was the locomotive-washing area, another the fueling-and-sanding area and the third the fuel-tank-repair area.

These three areas were paved and each was surrounded by curbs to contain the waste water and oil. By an underground drainage system, the waste water is collected and conveyed by a new sewer to a "wet well," which



COAGULATING CHEMICALS are put into solution in these mixing tanks. Two tanks each are used for lime and alum so that one tank is always serviceable for pumping each solution to the oil separator.



SKIMMER at top of oil-separation tank removes about 95% of oil from water surface. Coagulated oil sinks to bottom and is removed by sludge conveyor. Cleaned water then goes into city sewer.

pollution

serves as a reservoir for a new treating plant. The latter includes pumps, a skimming tank, a chemical-mixing plant and an oil-and-sludge receiving tank.

Waste water is now pumped from the wet well to the skimming tank where chemicals are introduced. The chemicals cause most of the oil to coagulate and settle on the bottom of the tank. Chemicals used are lime and alum, which are introduced as solutions from the chemical-mixing plant.

The settled residue is removed from the tank by a screw conveyor and is flushed to the oil-and-sludge receiving tank. This tank is cleaned regularly by a scavenger concern. A skimmer in the skimming tank removes about 95% of the oil remaining on the surface. This oil also is conveyed to the oil-and-sludge receiving tank and the cleaned water effluent is discharged to the city sewer.

● **Meets District's criterion.** To conform with the standards approved by the Sanitary District, the effluent from the treating plant must contain only 100 parts per million or less of contaminants. The new plant has met this condition fully since it was placed in operation, says a railroad spokesman.

The design and plans for this plant were made by Consoer, Townsend & Associates, consulting engineers, Chicago. This firm also supervised the construction work. The John Erskine Co., Skokie, Ill., was the general contractor. ■

PEOPLE IN THE NEWS

ASSOCIATION OF AMERICAN RAILROADS.—The Pittsburgh offices of the Car Service Division, General Claims Division and **Allegheny Regional Advisory Board** have moved to the North American Rockwell Building, 5th Avenue & Wood Street, Pittsburgh, Pa. 15222.

The AAR **Communication & Signal Section** has moved to 1920 L Street, N.W., Washington, D.C. 20036.

BANGOR & AROOSTOOK.—**Richard B. Gray,** statistical clerk, appointed assistant treasurer, succeeding **Lewis B. Neal,** retired after 44 years of service.

Robert P. Groves, assistant superintendent of transportation, Houlton, Me., named assistant vice president—operations and maintenance, Bangor. **Leigh S. Milton,** trainmaster, Houlton, succeeds Mr. Groves. **Keith D. Greenlaw,** yardmaster, Oakfield, succeeds Mr. Milton as trainmaster.

BURLINGTON.—**J. C. Weiland,** general manager of industrial development, Chicago, named director of industrial development and real estate there, to succeed **George F. Defiel,** elected vice president—industrial development, **Northern Pacific. Richard E. Bieber,** assistant general manager of industrial development, Chicago, succeeds Mr. Weiland.

Joseph C. Swain appointed personnel officer, Chicago. Mr. Swain was formerly an employment specialist and industrial relations consultant for **Daniel, Urbahn, Seelye and Fuller.**

William C. Carter, terminal superintendent, Lincoln, Neb., transferred to Denver, to succeed **Elwood C. Ackerman,** retired. Mr. Carter's successor is **Orvan E. Stevens,** division superintendent, McCook, Neb. **John M. Sheldon,** terminal trainmaster, Lincoln, becomes assistant terminal superintendent there. **John C. Pohl,** trainmaster, McCook, named assistant superintendent there. **Leroy E. Hamilton,** city passenger agent, Chicago, appointed division passenger agent, Galesburg, Ill.

CANADIAN NATIONAL.—**C. E. Reynolds,** general superintendent of express, St. Lawrence region, Montreal, appointed general superintendent of transportation, Prairie region, Winnipeg, Man., succeeding **A. C. Weaver,** named grain industry coordinator, Winnipeg, with system jurisdiction. **H. C. Williams,** assistant general superintendent express, Montreal, succeeds Mr. Reynolds.

J. M. Provost, assistant to vice president and general manager, appointed manager of administrative service, St. Lawrence region, Montreal, and his former position abolished.

James J. Harris, research planning officer—grain handling, Winnipeg, appointed general superintendent of equipment, Great Lakes Region, Toronto.

J. Leo Moisan, manager of industrial development, St. Lawrence Region, appointed assistant chief of industrial development, Montreal.

Richard M. Veenis, assistant manager, Toronto Area, since Jan. 1, appointed manager, Southwestern Ontario Area, London, Ont., on April 16. Mr. Veenis succeeds **Alfred E. Street,** who will head the British Columbia Area.

C. F. Armstrong, assistant chief of transportation—planning, promoted to chief of transportation, Montreal, succeeding **J. D. Hayes,** promoted.

CANADIAN PACIFIC.—**J. M. Bentham,** manager, Department of Research, Montreal, appointed vice president, purchases and stores, Montreal, succeeding **H. P. Millar,** who retired Jan. 31, after more than 50 years of service. **H. M. Romoff,** assistant manager, Department of Research, succeeds Mr. Bentham.

James Holmes, treasurer of the CP, appointed director of financial planning, attached to the office of the chairman and chief executive officer, Montreal. **D. E. Sloan,** manager of investment research, succeeds Mr. Holmes as treasurer of the company.

D. E. Donnelly, assistant manager—freight rates, Montreal, will have jurisdiction over system rates and divisions.

J. J. Zinger appointed grain movement controller, Winnipeg, Man. Mr. Zinger will be engaged in the implementation of major changes which are contemplated in grain handling procedures.

N. J. Riley, freight traffic representative, New York, appointed district manager—freight traffic there.

CHESAPEAKE & OHIO—BALTIMORE & OHIO.—**J. T. Lyon,** director of taxes, Baltimore, named assistant vice president—taxes, with offices in Cleveland and Baltimore.

Daniel C. Eubank, assistant terminal trainmaster, Dayton, Ohio, named terminal trainmaster, Cincinnati, succeeding **H. H. Corbett,** retired.

Irvin Beal, Jr., enginehouse foreman, Cumberland, Md., appointed general foreman, locomotive department there.

E. T. Smith, trainmaster, C&O, Peach Creek, W.Va., promoted to assistant superintendent there, and has been succeeded by **J. L. Adkins,** terminal trainmaster, Huntington.

H. C. Westmoreland, assistant engineer bridge erection, Huntington, appointed assistant engineer bridges & buildings—construction and maintenance there. **J. E. Boggs,** assistant general supervisor bridges and buildings, named assistant engineer bridge erection, Huntington, and has been succeeded by **R. L. Hartman,** supervisor bridges and buildings, Covington, Ky.

LeRoy Hurt, deputy comptroller, Baltimore, appointed administrative assistant, Cleveland. **Robert L. Hintz,** assistant to vice president, Cleveland, named director of accounting, Baltimore. **Carl C. Hawk,** manager of financial planning, Baltimore, named senior assistant treasurer, there. **Kevin J. Cahill,** manager of profit margin analysis, Baltimore, appointed manager of investments, Cleveland, succeeding **S. Winfield Cain, Jr.,** named manager of financial planning, Baltimore.

J. C. Weiland
Burlington

Richard E. Bieber
Burlington

C. E. Newhouse, assistant trainmaster, C&O, Grand Rapids, Mich., promoted to trainmaster, New Buffalo, Mich. succeeding **H. W. Stanfield.**

M. G. Rider, assistant superintendent freight loss and damage prevention, Chicago, promoted to regional superintendent freight loss and damage prevention, Pittsburgh, succeeding **C. S. Wilcox,** retired.

W. F. Adams, freight traffic manager—system, C&O, Richmond, retired. **T. M. Rutherford** appointed assistant to regional rate manager, C&O, Detroit, succeeding **J. M. Audas,** named regional rate manager, B&O, Pittsburgh.

Robert L. Stender, district manager—trailer service, Chicago, named district sales manager, Saginaw, Mich. **Kenneth J. Duncan,** sales manager, B&O, Detroit, named automotive sales manager there. **O. M. Provenzano,** district sales manager, Hamilton, Ohio, succeeds Mr. Duncan. **Paul D. Denton,** manager—special projects, rates, named assistant general freight agent, B&O, Baltimore. **W. Russell Johnson,** district manager of piggyback services, appointed district sales manager, Richmond.

CHICAGO & NORTH WESTERN.—**N. H. Jorgensen** named trainmaster, Galena division, Sterling, Ill.

J. M. Tierney, regional sales manager, Cincinnati, advanced to general manager of intermodal sales, Chicago.

T. W. Thompson named trainmaster, Twin Cities division, St. Paul.

The following appointed trainmasters: **D. J. Beatty,** Wisconsin division, Janesville, Wis.; **J. C. Malcom,** Twin Cities division, Superior, Wis.; **G. L. Walker,** Chicago Terminal division, Chicago; **G. M. Wollard,** Missouri division, Des Moines, Iowa. Mr. Wollard succeeds the late **R. D. Merritt.**

CHICAGO SOUTH SHORE & SOUTH BEND.—**Loren F. Pohl,** chief engineer, named assistant to the president. **Charles F. Mulrenan,** assistant chief engineer, succeeds Mr. Pohl. Both will have headquarters at Michigan City, Ind.

CLINCHFIELD.—**William E. Little** appointed district freight agent, Jacksonville, Fla., succeeding **A. F. McGuffin,** retired March 29, after more than 45 years of service.

FORT WORTH & DENVER.—Position of general manager-chief engineer-superintendent abolished. **J. E. Schobert** named

Joseph J. Pfister
Jersey Central

George F. Defiel
NP

Howard F. Hansen
UP

James G. Black
UP

Howard R. Williams
UP

John L. Jorgensen
UP

general superintendent, Fort Worth, Tex. **E. A. Graham** appointed chief engineer, Fort Worth. Mr. Graham will continue to serve as chief engineer, **Colorado & Southern,** Denver. **J. W. Wood** becomes trainmaster, joint Texas division of the **Rock Island** and the **FW&D,** with headquarters at Teague, Tex.

GRAND TRUNK WESTERN.—Headquarters of the Detroit division have been moved from Detroit to Pontiac, Mich.

GREAT NORTHERN.—J. M. Hick, assistant general superintendent of the car department, appointed general superintendent of the car department, succeeding **J. F. Likarish,** retired. Mr. Hick's successor is **R. J. Fritz,** superintendent of the car department, who in turn is succeeded by **O. J. Martin.**

ILLINOIS CENTRAL.—John F. Belt appointed director of real estate and property taxation. **R. A. Irvine** named real estate manager, and **D. Konstantelos,** real estate agent.

In the personnel department, the following labor relations officers named to new positions: **J. F. Roberts** becomes assistant director of labor relations; **O. B. Joy,** assistant to the director of labor relations; **J. F. Boewe, L. S. Graves, J. P. Lange** and **Narvell Strickland,** managers of labor relations.

JERSEY CENTRAL.—Joseph J. Pfister appointed chief mechanical officer of the CNJ at Elizabethport, N.J. Mr. Pfister had held a similar position with **Penn Central's** New Haven Region. **George C. Wilms, Jr.,** named mechanical-electrical engineer; **Norman Ascough,** superintendent passenger car department; and **Anthony C. Pisano,** superintendent freight car department, all at Elizabethport.

Peter R. Broadley, mechanical–electrical engineer, and **Fred P. Neesley,** superintendent of locomotive maintenance, retired April 1.

Frederick W. Rosenbauer, Jr., assistant to comptoller, promoted to comptroller, Newark, N.J.

LEHIGH VALLEY.—Joseph M. Srnec promoted to district sales manager, Kansas City, Mo., succeeding **Rodman K. Heubach,** transferred to St. Louis. Mr. Heubach succeeds **Robert D. Price,** transferred to Houston, Tex.

LONG ISLAND.—Edward J. O'Connor, general foreman–car shop, appointed general foreman–electric car inspection shops at Dunton, with jurisdiction over the Dunton and Brooklyn electric car shops. **Daniel J. Saporito,** foreman, appointed general foreman–electric car terminals, Jamaica. **Charles Melice, Jr.,** promoted to general foreman–Morris Park car shops.

LOUISVILLE & NASHVILLE.—N. K. Ferguson, division superintendent, Evansville, Ind., named assistant chief transportation officer-planning and procedures, Louisville. Mr. Ferguson's successor is **J. R. Parsons, Jr.,** transferred from Birmingham, Ala., who in turn is replaced by **C. W. Ashby, Jr.,** assistant division superintendent, Mobile. **T. J. Duncan** transferred from Corbin, Ky., to replace Mr. Ashby. **I. L. Bell,** assistant to chief transportation officer, Louisville, appointed division superintendent, Western & Atlantic division, Atlanta, to succeed **E. H. Civils, Jr.,** who retired Feb. 28 after more than 50 years of service.

Richard J. Mushko, foreign freight agent, New York, appointed district freight agent there. **Donald R. Sanns, Jr.,** rate clerk, New York, succeeds Mr. Mushko.

William C. Andrews, freight traffic agent, Atlanta, Ga., appointed piggyback and automotive traffic coordinator there.

L. A. Logsdon, division engineer, Evansville, Ind., named project engineer, Louisville. Mr. Logsdon's successor is **T. R. Rosamond,** general roadmaster, Knoxville, Tenn.

MILITARY TRAFFIC MANAGEMENT & TERMINAL SERVICE. — Major General Clarence J. Lang, chief of staff, U.S. Army Material Command, on April 1 replaced **Major General John J. Lane,** retired, as commander of MTMTS.

MISSOURI PACIFIC.—R. M. West, Jr., trainmaster, St. Louis, transferred to Newport, Ark. **J. H. Mellon,** trainmaster, Kansas City, Mo., succeeds Mr. West, and in turn is replaced by **J. R. Scherer,** superintendent, Kansas division, Osawatomie, Kans. Mr. Scherer's successor is **B. E. Kerlee,** superintendent, Omaha division, Atchison, Kans., who in turn is succeeded by **H. E. Handley, Jr.,** assistant superintendent, Memphis. **D. W. Welch,** trainmaster, Corpus Christi, Tex., replaces Mr. Handley. **A. L. Boyt** named to succeed Mr. Welch.

MISSOURI PACIFIC-TEXAS & PACIFIC.—J. W. Gessner appointed assistant to vice president-operation, St. Louis. **G. A. Grissom** named superintendent stations and claim prevention, St. Louis. **R. E. Sansom,** district superintendent stations and claim prevention, Western district, **MP,** Kansas City, Mo., transferred to the Gulf district, Houston. **W. T. Farr, Jr.,** assistant district superintendent stations and claim prevention, Gulf district, **MP,** Houston, replaces Mr. Sansom, and in turn is replaced by **Wyman Miller, K. K. Kennerly** and **K. E. Banks** named trainmaster, **T&P,** Dallas and Arlington, Tex., respectively. **W. R. Stokes, Jr.** named terminal manager, **MP,** and **Missouri Pacific Trunk Lines, Inc.,** Corpus Christi, Tex., succeeding **G. N. Craig, Jr.,** transferred to Memphis, Tenn.

W. E. Butler, chief dispatcher, Kansas City, Mo., appointed manager motive power distribution, St. Louis. Mr. Butler's successor is **R. G. Swindler, Jr.,** trainmaster, Wichita, Kans., who in turn is replaced by **W. T. Ray,** transferred from Osawatomie, Kans. **R. L. McCoy** replaces Mr. Ray. **Dr. W. G. Juergens** named assistant chief medical officer, **MP, T&P** and subsidiaries, and **Chicago & Eastern Illinois,** with headquarters at St. Louis.

NEW YORK & LONG BRANCH.—Robert W. Minor, senior vice president, **Penn Central,** New York, elected president and a director NY&LB **Robert F. Lawson,** general manager, New York Region, Penn Central, elected vice president and director, NY&LB.

NORFOLK & WESTERN.—Richard F. Dunlap, vice president–operations, N&W, in addition named president of two N&W subsidiary lines. Mr. Dunlap succeeds N&W President **Herman H. Pevler** as president, **Norfolk, Franklin & Danville** and the **Chesapeake Western.** Mr. Dunlap also elected a member executive committee of both roads.

H. Bartlett Stewart, Jr., N&W vice president, retired after 40 years in the railroad industry. Mr. Stewart was chairman and chief executive officer of the **Akron, Canton & Youngstown** when it became part of the N&W system.

Edward J. Siemon, Jr., coal traffic manager–rates, appointed general coal traffic manager–rates. **C. C. Manning, Jr.,** assistant coal traffic manager–rates, succeeds Mr. Siemon. **D. L. Humphry,** assistant to coal traffic manager–rates, succeeds Mr. Manning. **J. W. McGarrell, Jr.,** assistant to coal traffic manager–rates, also named assistant coal traffic manager–rates. **G. W. Simpson, Jr.,** assistant traffic manager–

pricing, and **C. C. Lavender,** chief rate analyst, named assistants to coal traffic manager–rates.

Tam P. Vannoy, assistant editor, **Norfolk & Western Magazine,** promoted to editor, succeeding **Harold T. Freed,** who retired March 1.

Jack D. Bailey, Jr., staff assistant to the president, appointed director of the travel bureau.

John W. Fox, trainmaster, Decatur, Ill., appointed assistant manager operating rules.

John H. Leckrone, auditor of revenues, Roanoke operations, assigned system-wide responsibility for revenue accounting.

The following have retired: **Tom L. Davis,** general traffic manager–sales, Pittsburgh; **Lawrence P. Murray** and **Leonard J. Schirmer,** traffic managers–pricing, Roanoke; **L. J. Peffer,** assistant traffic manager–sales, Cleveland, and **J. C. Jones,** assistant traffic manager–sales Detroit.

William T. Ross, general manager of transportation, promoted to assistant vice president–operations, Roanoke. **Leon Atkinson, Jr.,** assistant general manager transportation, succeeds Mr. Ross. **Thomas J. Golian,** superintendent, Fort Wayne, Ind., succeeds Mr. Atkinson. **Bill Bridger,** assistant superintendent, Chicago Terminal, moves to Fort Wayne as superintendent. **Paul W. Fleming,** assistant manager, Systems Operations Center, Roanoke, promoted to manager, succeeding **Thomas I. DeBusk,** who replaces Mr. Bridger in Chicago.

Raymond E. Mattocks, manager of budget planning, promoted to director, management information system and **W. Hunter Powell** named assistant director. Mr. Powell was formerly plant industrial engineer, Babcock & Wilcox Co. in Pennsylvania.

T. I. DeBusk, Jr. named assistant superintendent, Chicago Terminal division, Chicago.

NORTHERN PACIFIC.—George F. Defiel has been named to the newly established position of vice president–industrial development. Mr. Defiel was formerly director of industrial development and real estate, **Burlington. George R. Powe,** general manager of properties and industrial development, promoted to the new position of assistant vice president–minerals.

PENN CENTRAL.—James W. McDonnell, regional comptroller, Eastern Region, Philadelphia, appointed New Haven regional comptroller at New Haven, Conn.

Robert W. Mustard, regional mechanical superintendent, Lake Region, Cleveland, Ohio, appointed regional mechanical superintendent, New Haven Region. **Richard C. Ambelang,** district transportation superintendent, northeastern region, Syracuse, N.Y., succeeds Mr. Mustard.

George E. Harrington, freight sales manager, P&LE, Pittsburgh, appointed freight sales manager, PC, Pittsburgh, succeeding **James A. Brown,** named vice president traffic, **Lehigh Valley,** New York (March 3, p. 27).

Richard J. Isling, freight sales manager, appointed manager–pricing services, PC and P&LE, Pittsburgh. **Frank G. Tatnall** and **Daniel S. Devens** appointed assistant managers–pricing services. Mr. Tatnall was special representative, freight rate service, PRR. Mr. Devens was district freight sales manager, P&LE.

PITTSBURGH & LAKE ERIE.—John S. Rusenko appointed administrative assistant, Pittsburgh. He succeeds **Robert R. Firestone,** executive assistant, who had been responsible for handling of local public relations matters for the P&LE. Mr. Firestone left the P&LE on April 1 to become manager public relations, **Bessemer & Lake Erie,** Pittsburgh (RA, April 14, p. 35).

Robert Barker, district coal sales manager, Pittsburgh, appointed coal sales manager.

READING.—Robert A. Sutherland, auditor of revenues, Philadelphia, appointed director of information systems, reporting to the vice president–finance.

Ernest H. Follweiler, purchasing agent, has been assigned responsibility for the Purchases and Stores Department, which was formerly handled by the late **J. K. Herman,** director of purchases and materials. **G. J. Young,** manager of materials, will report to Mr. Follweiler and be responsible for the stores function, including the annual inventory.

Matthew L. Werner, Jr., manager of TOFC operations, named manager safety.

Linwood A. Kulp, assistant auditor of revenues, promoted to auditor of revenues and his former position abolished. **Barnett A. David,** manager of accounts, named manager of revenues. **Edward J. Rodia,** manager of reports and statistics, appointed manager of accounts. **Peter R. Valentino,** chief, Passenger Bureau, appointed manager of reports and statistics.

RICHMOND, FREDERICKSBURG & POTOMAC.—James E. Hargrave, Jr., appointed assistant to customer service accountant. Mr. Hargrave was formerly with the **Seaboard Coast Line** at Richmond, Va.

Kenneth T. Finkbiner named general agent, Philadelphia. He was formerly with the **Penn Central.**

William T. Guthrow, system analyst, promoted to senior systems analyst.

M. Banton Bradey, staff assistant, real estate and industrial development, appointed assistant manager real estate and industrial development, Richmond.

Samuel B. Tudor, manager-tours, promoted to manager traffic services.

Richard T. Taylor, Jr., communications inspector, promoted to chief communications inspector.

ROCK ISLAND.—Charles E. Weller appointed engineer–maintenance of way, Chicago. He was formerly engineer–maintenance of way, **Illinois Central.**

Dale J. Bright, assistant operations manager, Chicago piggyback terminal, named operations manager–trailer service, Chicago.

Russell G. McNeely, manager-TOFC service, appointed manager-perishable traffic. **Lawrence J. West,** district manager-perishable sales, Salinas, Calif., named marketing manager-fruits and vegetables there. **Robert F. Smith,** freight sales representative, Toronto, appointed district manager-freight sales there. **Allen W. Brown,** director freight claim services, appointed director of customer relations. **Robert M. Hober,** formerly district manager, **Helms Express,** Wallingford, Conn., named assistant general manager, piggyback operations, **RI,** with headquarters in Chicago.

Craig E. Burroughs, supervisor in the economic research and cost control department, named manager of economic research. **John J. Magruder,** supervisor in the economic and cost control department, appointed manager of cost control. **Samuel L. Browman** and **Edward F. Patrick** named trailer service representatives, with headquarters in St. Paul and Philadelphia, respectively. Mr. Browman was formerly traffic manager, **Commerce of Minnesota,** and Mr. Patrick was senior rate and route analyst, **U. S. Steel Corp.**

ST. LOUIS SOUTHWESTERN.—Harold W. Mason, freight traffic manager-rates and divisions, St. Louis, retired Feb. 28 after more than 51 years' service.

SANTA FE.—W. R. Henry and **E. L. Jordan** named to the newly created positions of special representative, executive department, with headquarters at Houston and Dallas, respectively. Messrs. Henry and Jordan were assistants to the general manager, Houston and Amarillo, respectively.

H. F. Glasgow appointed assistant to general manager, Coast Lines, Los Angeles, in charge of safety program. **R. D. Shaver** named assistant to general manager, having jurisdiction over safety, with headquarters at Topeka, Kans. **J. M. McMillan** and **J. H. Pulaski** named superintendents of safety, Illinois division and Chicago Terminal division, respectively.

John J. Mooney, division freight agent, Chicago, appointed assistant general freight agent there. **Robert T. Ryan** assistant division freight agent, Chicago, replaces Mr. Mooney.

D. M. Miller named general transportation inspector, Eastern Lines, Topeka, Kans., succeeding the late **D. E. Bergerhouse.**

William L. Paul, director, cost analysis and research, Chicago, and **Elmer C. Honath,** district engineer, Western District, Eastern Lines, Topeka, Kans., named special assistants to vice president, Chicago. **C. L. Holman** named to succeed Mr. Honath.

R. E. Wilson named assistant superintendent of transportation, Chicago.

SOO LINE.—Doris L. Valley elected assistant secretary, to succeed **Clarence H. Juettner,** retired.

SOUTHERN—James W. Bradley, superintendent communications, Charlotte, N.C., retired Jan. 31.

Elmore A. Evers, regional sales manager, Birmingham, Ala., appointed assistant vice president–sales, Washington. **Conley S. Boothe,** district sales manager, Birmingham, promoted to succeed Mr. Ev-

(Continued on page 32)

NEW PRODUCTS REPORT

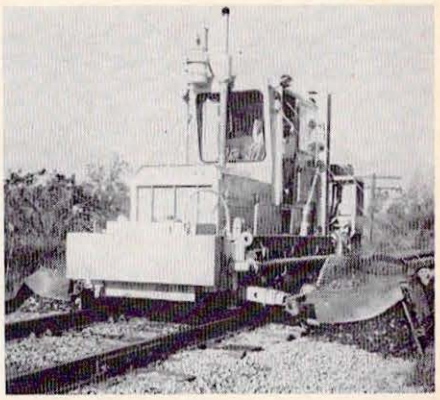
Brush cutter (RA-1)

Designed to replace a heavier and more expensive brush-cutting machine is a new unit designated the Brush Kutter. It weighs approximately 12,000 lb. One power unit, either diesel or gasoline, is used to provide all the power required. It has a four-wheel hydrostatic drive which provides stepless speed variations from zero mph to 16 mph. Any speed setting within this range is maintained regardless of the terrain, it is said. *Kershaw Manufacturing Co.*

Crossing protection (RA-2)

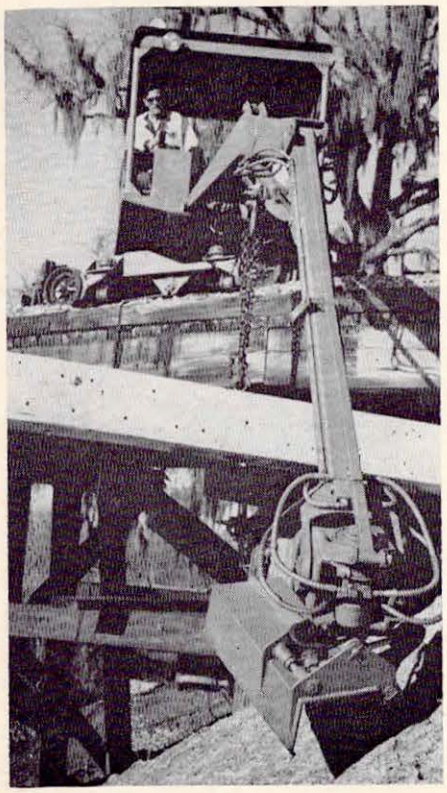
The rural-urban crossing protection system known as RU 100 operates over an approximately 10,000-feet range to provide adequate warning time for the highest train speeds encountered in territories involved. The system utilizes a transmitter, receiver, relay logic, battery and battery charger. The transmitter is a solid-state device potted in epoxy resin which can be mounted in a standard bootleg buried between the ties or beside the track. Connection to the transmitter is by a single wire running from each rail.

The receiver is a solid-state device which can be housed within the standard signal case or in a box mounted on the signal standard with the flashing lights at the crossing. The receiver is connected to the rails by a single wire to each, a power source and the flashing lights and gates plus relay logic for bi-directional installations (for unidirectional installations only a transmitter and receiver are required). This logic determines train direction and applies the appropriate controls. *Marquardt Industrial Products Co.*



Rotary scarifier (RA-3)

A unit designated the Rotary Scarifier is available to provide a faster and more economical method for scarifying shoulders for (1) improving drainage; (2) breaking up mud pockets; (3) deweeding the shoulders; (4) reclaiming ballast from the toe line; and (5) redressing the shoulders. All of these functions are performed in one pass. It is claimed that the Rotary Scarifier will provide a minimum of one mile of production per on-track hour. *Kershaw Manufacturing Co.*



Bridge crane (RA-4)

A machine, designated the Bridge Krane, has been developed to assist railroads in removing wood ties from deck trestles and replacing them with 700- lb. concrete ties. It also is designed to assist in removing wood caps and replacing them with concrete caps weighing 4,000 lb. It is diesel powered and hydraulically operated. The deck rotates 360 deg and its boom retracts and extends horizontally 17 feet and raises and lowers 24 feet. *Kershaw Mfg. Co.*

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(Contined from page 30)

ers. **C. Harry Smith,** government sales representative, Washington, for both the Southern and **Central of Georgia,** appointed district sales manager, Southern, Hattiesburg, Miss., to succeed **Thomas J. Young,** who replaces Mr. Boothe. **Wyatt C. Hurst,** sales manager, Birmingham, appointed district sales manager, Meridian, Miss.

Wiley F. Mitchell, Jr., general attorney, promoted to general solicitor, Washington. **R. Allan Wimbish,** assistant general solicitor, promoted to general attorney. **David R. Wilson,** solicitor, promoted to assistant general solicitor.

Norman G. Heller appointed director of Operations Research, Systems Division of Marketing, Atlanta, Ga. **Charles R. Thomas** staff assistant—marketing, Atlanta, succeeds Mr. Heller as assistant to vice president—marketing, Washington.

SOUTHERN PACIFIC—Oliver A. Thomas, assistant tax commissioner, named general tax commissioner, with headquarters continuing at San Francisco, to succeed **Raymond E. Marks,** retired.

G. M. Batty named district freight agent, San Antonio, Tex., replacing **R. J. Aniol,** district freight and passenger agent, who retired Feb. 28 after more than 47 years' service.

Theodore Wright, Jr. appointed sales manager, **Southern Pacific Marine Transport, Inc.,** San Francisco.

J. R. Cade, general purchasing agent-system, San Francisco, retired recently after more than 48 years of service.

STATE BELT RAILROAD, STATE OF CALIFORNIA.—On Feb. 7 ownership of this railroad was transferred from the State of California to the City of San Francisco and the name changed to the **San Francisco Belt Railroad,** operated by the San Francisco Port Commission.

TEXAS & PACIFIC.—A. McLeod, Jr. named trainmaster, Texarkana, Ark., to succeed **S. R. Wall,** who retired recently after 43 years' service.

TORONTO, HAMILTON & BUFFALO.—Jack W. Harrison appointed assistant traffic manager—rates and divisions, Hamilton, Ont.

UNITED STATES FREIGHT CO.—Joseph T. Kane appointed to the newly created position of director of communications, New York. Mr. Kane was formerly director of public relations and advertising, REA Express.

UNION PACIFIC.—In a restructuring of Land Division, **Howard F. Hansen,** assistant to the chief executive officer-Land Division, named executive director-lands. **James G. Black,** general manager of properties, appointed executive director-developments. **Howard R. Williams,** valuation engineer, Land Division, succeeds Mr. Black as general manager of properties.

John L. Jorgensen, chairman, EDP research, named to the newly created position of director, management information services.

TRANSIT

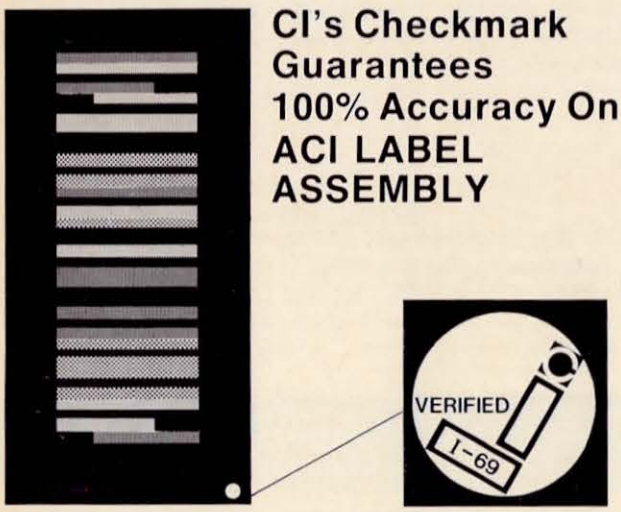
Robert D. Weeks, manager, metropolitan transportation projects, transportation equipment business, **General Electric Co.,** has been appointed manager—marketing, Transit Systems Department, Erie, Pa.

SUPPLY TRADE

Kaiser Aluminum & Chemical Corp. has added a market development department to its **Electrical Products Division.** The new department will concentrate on development of electrical products for the railroad and rapid transit industries, and will be headed by **G. N. Houck,** manager, market development, transportation systems.

H. V. Van Valkenburg, vice president, **Anaconda Wire & Cable Co.,** New York, has been named head of Anaconda's special program to develop and service markets for products in the field of transportation. Mr. Van Valkenburg was formerly in charge of sales, Eastern region.

Robert T. Brumbaugh, vice president, **Streeter Amet** division of **Mangood Corp.,** has been elected president.



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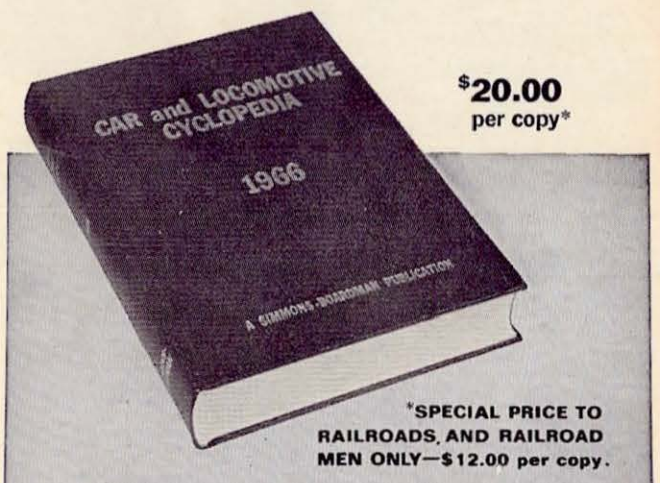

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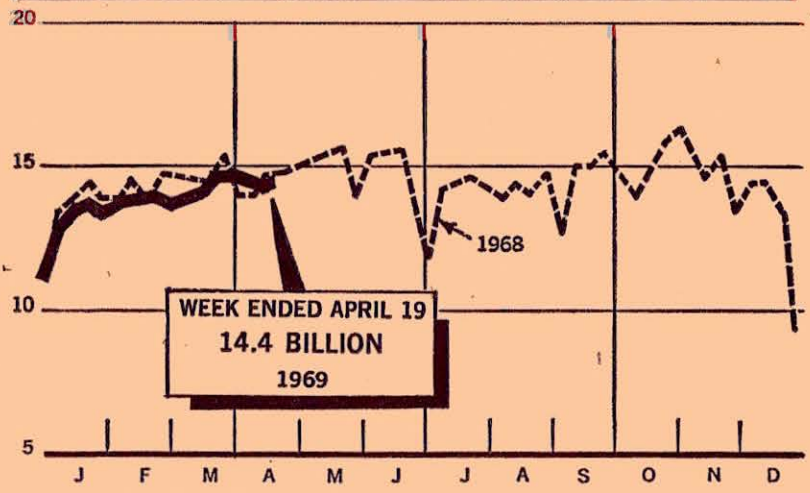
RAIL FREIGHT TRAFFIC TRENDS

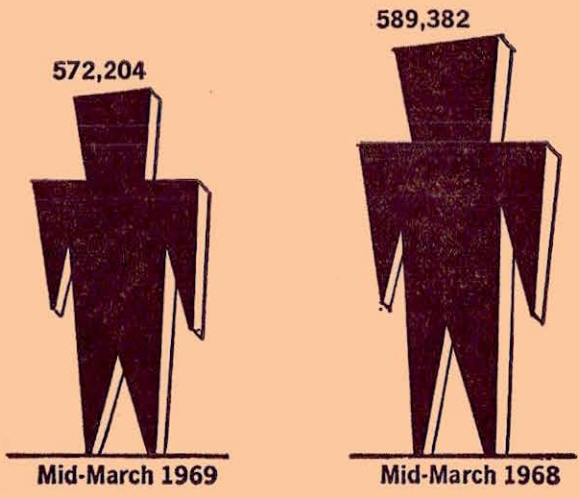
BILLION TON-MILES (Estimated)



Source: Association of American Railroads

RAILROAD EMPLOYMENT

(CLASS I LINE-HAUL RAILROADS)



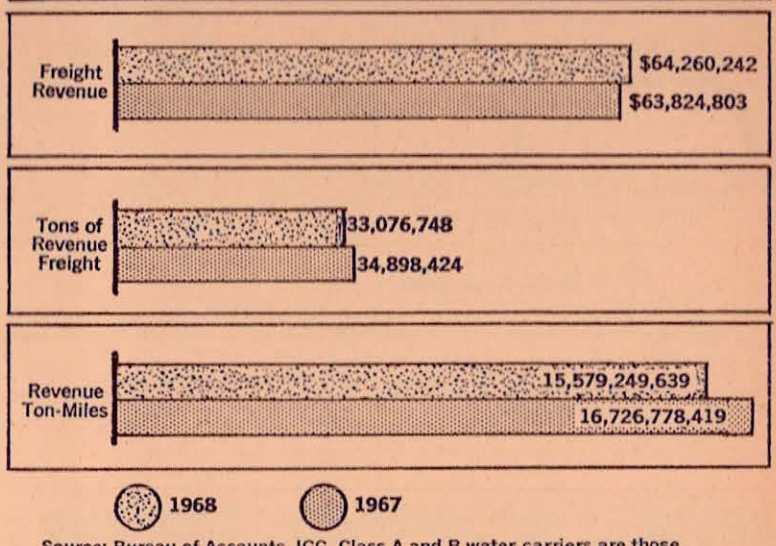
Source: Bureau of Accounts, ICC.

Current Statistics

Net income, Class I roads	
Twelve months, 1968	$593,000,000
Twelve months, 1967	$551,000,000
New freight cars on order	
April 1, 1969	34,068
April 1, 1968	22,605
New freight cars delivered	
3 mos., 1969	14,999
3 mos., 1968	16,183
Serviceable cars	
March 1, 1969	1,378,477
March 1, 1968	1,400,628

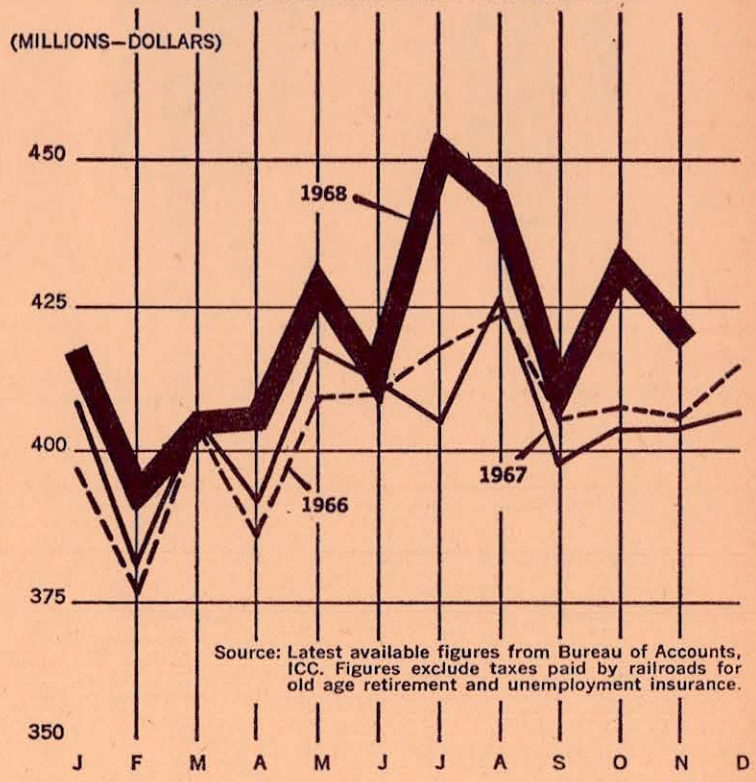
CLASS A and B WATER CARRIERS

FOURTH QUARTER REVENUE AND TRAFFIC 1968 vs. 1967



Source: Bureau of Accounts, ICC. Class A and B water carriers are those having, respectively, operating revenues exceeding $500,000 and exceeding $100,000 but less than $500,000.

WAGE STATISTICS
CLASS I LINE-HAUL RAILROADS



Source: Latest available figures from Bureau of Accounts, ICC. Figures exclude taxes paid by railroads for old age retirement and unemployment insurance.

MARKET OUTLOOK

CARLOADINGS

Loadings of revenue freight in the week ended April 26 totaled 569,186 cars, the Association of American Railroads announced on May 1. This was an increase of 23,013 cars, or 4.2%, compared with the previous week; a decrease of 2,265 cars, or 0.4%, compared with the corresponding week last year; and an increase of 1,324 cars, or 0.2%, compared with the equivalent 1967 week. Ton-miles generated by carloadings in the week ended April 26 are estimated at 14.9 billion, an increase of 1.5% above the corresponding week of 1968, and 3.0% above the 1967 week.

REVENUE FREIGHT CARLOADINGS

Comodity	Apr. 19 week	Preceding week	Per cent change
Grain	18,980	18,711	+ 1.4
Farm products	14,247	12,507	+13.9
Metallic ores	28,348	22,418	+26.5
Coal	106,260	103,177	+ 3.0
Crushed stone, gravel & sand	32,524	30,719	+ 5.9
Nonmetallic minerals	9,794	10,446	— 6.2
Grain mill products	19,909	18,562	+ 7.3
Food & kindred products	23,713	22,925	+ 3.4
Primary forest products	22,738	25,026	— 9.1
Lumber & wood products (except furniture)	15,602	15,552	+ 0.3
Pulp, paper & allied products	24,786	24,536	+ 1.0
Chemicals & allied products	36,362	35,733	+ 1.8
Petroleum products	11,423	11,472	— 0.4
Stone, clay & glass products	21,861	22,286	— 1.9
Coke	8,417	8,954	— 6.0
Metals & products	30,614	30,059	+ 1.8
Motor vehicles & equipment	23,899	22,580	+ 5.8
Waste & scrap materials	15,071	14,500	+ 3.9
Forwarder & shipper assn. traffic	6,727	6,812	— 1.2
All other carloads	72,913	68,754	+ 6.0
LCL traffic	1,985	2,022	— 1.8
Total cars loaded	546,173	527,751	+ 3.5

CUMULATIVE TOTAL, 16 WEEKS	1969	1968	1967
	8,224,418	8,275,688	8,422,007

PIGGYBACK CARLOADINGS

U. S. piggyback loadings for the week ended April 19 totaled 25,107 cars, carrying 41,561 trailers, compared with 25,165 cars, carrying 39,495 trailers, in the corresponding 1968 week. Loadings for 1969 up to April 19 totaled 404,955 cars, carrying 663,957 trailers, compared with 391,373 cars, carrying 636,342 trailers, in the corresponding period of 1968.

IN CANADA

Cumulative	Revenue Cars Loaded	Total Cars Rec'd from Connections
April 7, 1969	958,314	342,325
April 7, 1968	930,334	332,318

FREIGHT-TRAIN CARS

● *Bangor & Aroostook.*—Directors have approved acquisition of 100 50-foot, 70-ton, cushioned-underframe box cars and 75 jumbo mechanical refrigerator cars at a cost of $4.2 million.

● *Penn Central.*—Ordered 400 jumbo covered hopper cars from its Samuel Rea shop, Hollidaysburg, Pa., at a cost of $6.4 million. The 100-ton, 4,700-cubic-foot cars will bring PC's fleet of covered hoppers assigned to grain service to 3,186. Deliveries will start in June and are scheduled for completion in October. PC has just completed rebuilding 300 former New Haven box cars at the Rea shop at a cost of $2.1 million.

● *Orders and deliveries.*—Orders were placed in March for 5,957 new freight cars, compared with 3,650 in February and 3860 in March 1968. Rebuilds ordered in March totaled 721, compared with 180 in February and 41 in March 1968. Backlog of new cars on order and undelivered on April 1 was 34,068, compared with 33,434 on March 1 and 22,605 on April 1, 1968.

FREIGHT-TRAIN CARS DELIVERED AND ORDERED IN MARCH AND BACKLOG OF ORDERS ON APRIL 1, 1969

DELIVERED

	Mar. 1969	Feb. 1969	Mar. 1968
Built new by car builders	4,516	4,439	3,978
Built new in railroad shops	796	766	1,734
Built new—total	5,312	5,205	5,712
Rebuilt	451	699	1,234
TOTAL DELIVERED	5,763	5,904	6,946

ORDERED

To be built new by car builders	5,157	3,145	3,380
To be built new in railroad shops	800	505	480
To be built new—total	5,957	3,650	3,860
To be rebuilt	721	180	41
TOTAL ORDERED	6,678	3,830	3,901

ON ORDER AND UNDELIVERED

	April 1, 1969	Mar. 1, 1969	April 1, 1968
To be built new by car builders	24,326	23,696	11,866
To be built new in railroad shops	9,742	9,738	10,739
To be built new—total	34,068	33,434	22,605
To be rebuilt	3,966	3,696	7,260
TOTAL ON ORDER	38,034	37,130	29,865

LOCOMOTIVES

● *Pacific Great Eastern.*—Has ordered four 3,000-hp units from MLW-Worthington.

NEW FACILITIES

● *Milwaukee Road.*—Will build a new-automobile distribution center at Kent, Wash. Grading has begun, and the 12-track facility is scheduled for completion in August. About 75,000 automobiles and trucks will be handled annually through the terminal.

YOU OUGHT TO KNOW

SUN program checks N&W freight cars

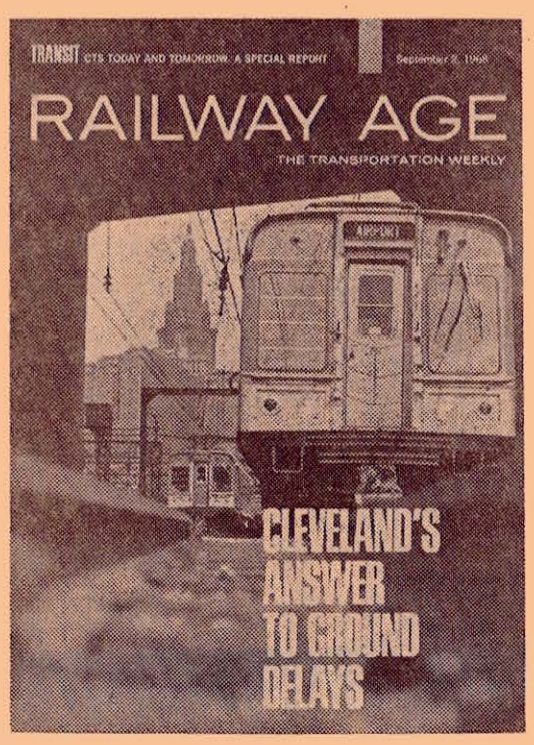
A computer-oriented program called SUN (System Utilization Network) that supervises the distribution of empty cars, has been inaugurated by the Norfolk & Western. Three times a day a computer report goes to the SUN center in Roanoke, Va., where the status, location and availability of all empty merchandise freight equipment on the N&W system is listed. In all, as many as 100,000 cars are involved. The system will also report trends and predict the number and types of cars that will be available within a 1-to-6-day period. "We'll be able to predict peak requirements for cars and have them distributed accordingly," says E. W. Nixon, N&W general manager of equipment. "We'll know well in advance if a surplus is building up at any one point."

Waterways report a big surge in plant location

A report from American Waterways Operators, Inc., shows that one rail competitor is doing well in the industrial development game. In first quarter 1969, production industries built, expanded, or announced plans for building or expanding 144 plants on or near U. S. waterways, AWO says. That's a 32% increase over fourth quarter 1968. In addition to 45 terminals, docks and wharves, developments included 40 chemical, 19 metal, 12 paper, 11 general manufacturing, five petroleum, four rubber, three grain, and two cement plants. The Mississippi River led 1969 developments with 27.

Carnegie-Mellon sets conference on high-speed

Carnegie-Mellon University's Transportation Research Institute (TRI) will sponsor a conference on high-speed ground transportation at the Mellon Institute, May 13-15. Transit experts from the U.S. and abroad will examine current developments in the field, new systems and alternatives, areas of needed fundamental research, factors which impede HSGT, and fundamental technological and economic problems.


TRANSIT CTS TODAY AND TOMORROW: A SPECIAL REPORT
RAILWAY AGE
THE TRANSPORTATION WEEKLY
CLEVELAND'S ANSWER TO GROUND DELAYS

Railway Age cover photo wins a Blue Ribbon

The color photograph which appeared on the September 2, 1968, front cover of Railway Age (see cut) has won first prize—the Blue Ribbon Award of Excellence—in the Illustrative Category of the Professional Photographers of Ohio Print Judging Contest. The prize-winning photo, which shows Cleveland's new airport transit cars, was arranged jointly by Railway Age and the General Electric Co. It was taken by Bill Gesten of the Cleveland studio, Scope Foto Arts. In the Ohio competition it received a score of 84—second highest in all categories in a field of more than 500 entries. The high score automatically qualifies the photo for display at Photo Expo 69 in New York this summer. The Ohio winner is also automatically qualified for the Professional Photographers of America competition in New York in June.

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DIVIDENDS DECLARED

ALGOMA CENTRAL.—8¢, quarterly, payable June 2 to holders of record May 8.

CAROLINA, CLINCHFIELD & OHIO—$1.25, quarterly, paid Jan. 16 to holders of record Jan. 3.

CHESAPEAKE & OHIO.—$1, quarterly, paid March 20 to holders of record March 3; $1, quarterly, payable June 20 to holders of record June 2.

CLEVELAND & PITTSBURGH.—7% Guaranteed, 87½¢, quarterly; 4% Special Guaranteed, 50¢, quarterly, both paid March 3 to holders of record Feb. 10.

CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC.—Preferred A, $1.25, paid March 27, June 26, Sept. 25 and Dec. 18 to holders of record March 7, June 6, Sept. 5 and Nov. 28, respectively.

DENVER & RIO GRANDE WESTERN.—27½¢, quarterly, paid March 10 to holders of record Feb. 28.

GULF, MOBILE & OHIO.—65¢, quarterly, paid March 17 to holders of record Feb. 26; $5 Preferred, $1.25, quarterly, payable Sept. 8 to holders of record Aug. 20.

ILLINOIS CENTRAL.—$3.50 Preferred, 87½¢, initial, paid April 1 to holders of record March 5.

MISSOURI PACIFIC.—Class A, $1.25, quarterly, paid March 31 to holders of record March 21.

NORFOLK & WESTERN.—$1.50, quarterly, paid March 10 to holders of record Feb. 10.

NORTHERN CENTRAL.—$2, semiannual, paid Jan. 15 to holders of record Dec. 31.

NORTHERN PACIFIC.—65¢, quarterly, paid April 30 to holders of record April 9.

PENN CENTRAL.—60¢, paid March 31 to holders of record March 10.

PEORIA & EASTERN.—$2.25 paid April 1 to holders of record March 21.

PIEDMONT & NORTHERN.—60¢, quarterly, paid April 19 to holders of record April 4.

PITTSBURGH & LAKE ERIE.—$1.50, quarterly, paid April 15 to holders of record March 28.

PITTSBURGH & WEST VIRGINIA.—4½¢, monthly, paid Jan. 21, Feb. 28, March 31, April 30, May 29 and June 30 to holders of record Jan. 17, Feb. 14, March 14, April 15, May 15 and June 13, respectively.

PITTSBURGH, FORT WAYNE & CHICAGO.—7% Preferred, $1.75, quarterly, paid April 8 to holders of record March 10.

PITTSBURGH, YOUNGSTOWN & ASHTABULA.—7% Preferred, $1.75, paid March 1 to holders of record Feb. 29.

RICHMOND, FREDERICKSBURG & POTOMAC.—$1.75, quarterly; 6% Gtd. stock, 25¢, extra, both paid April 14 to holders of record April 2.

SEABOARD COAST LINE.—55¢, quarterly, paid March 17 to holders of record March 3.

SOUTHERN.—70¢, quarterly, paid March 17 to holders of record Feb. 14; 5% Preferred, 25¢, quarterly, paid March 17, June 16 and Sept. 15 to holders of record Feb. 14, May 15 and Aug. 15.

SOUTHERN PACIFIC.—45¢, quarterly, paid March 24 to holders of record March 3.

UNION PACIFIC.—50¢, quarterly; 4% Preferred, 20¢, semiannual, both paid April 1 to holders of record March 10.

WESTERN MARYLAND.—40¢, quarterly, paid Dec. 31, 1968, to holders of record Dec. 20.

WESTERN PACIFIC.—55¢, quarterly, paid Feb. 17 to holders of record Feb. 3; 55¢, quarterly, payable May 15 to holders of record May 1.

WHEELING & LAKE ERIE.—$1.43¾, quarterly, paid May 1 to holders of record April 4.

WHITE PASS & YUKON.—NEW, 12½¢, quarterly, paid March 14 to holders of record Feb. 28.

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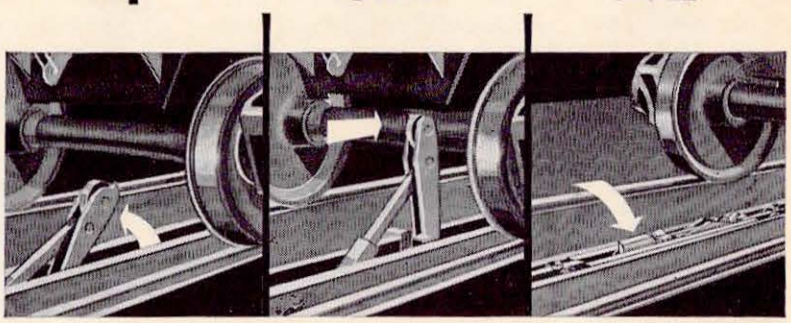

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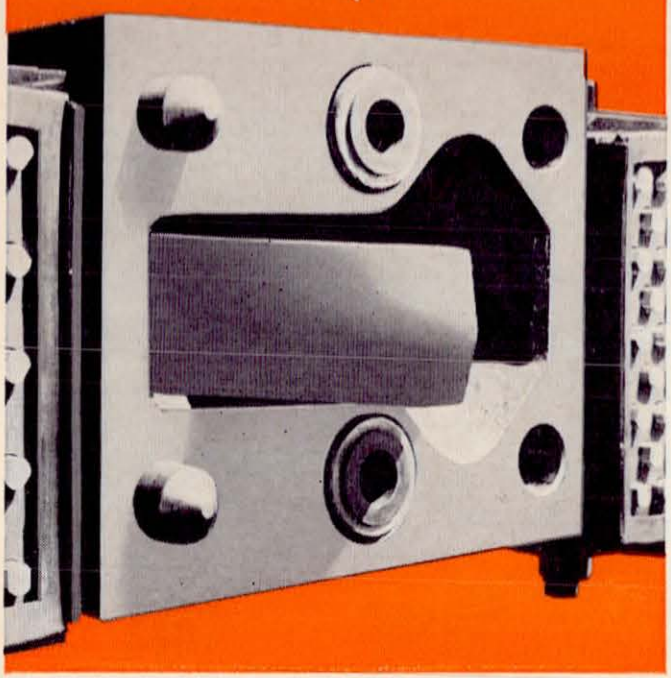

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Circle 9 on coupon page 31

How technology helps railroads

Advancements in railway technology must be based primarily on adapting new rolling stock concepts to the existing fixed plant because that is the most economical approach, M. Archer, vice president—research, Canadian National, told a recent Montreal conference of railway mechanical and electrical engineers. But, he added, advanced systems for appraisal of track condition now available to the industry should give an opportunity to undertake fundamental studies of the roadway structure with the twin aims of improving performance, reducing maintenance needs.

● **What's being done—and where.** Some of the newly available track appraisal techniques were discussed during technical sessions. The Canadian National, Southern, and U.S. Department of Transportation are all operating special track-evaluation cars. The Southern's car (RA, Dec. 11, 1967, p. 20) produces quality ratings for every segment of the routes it traverses, increasingly serving as a guide for the planning and funding of track maintenance. Southern engineers reported that inspection under dynamic conditions affords the opportunity to anticipate M/W cost and personnel requirements better than ever before.

The CN car has proved to produce accurate ratings when operated at speeds to 80 mph. Its immediate computation of track quality indices has been valuable in assessing the effectiveness of track maintenance machines—for instance, determining optimum methods for tamping. DOT work is currently attempting to bridge the gap between the appraisal of track geometry and the quality of the ride which is produced.

At the same time that "seat of the pants" appraisals of track structure are being displaced by more sophisticated techniques, methods of motive-power evaluation and management are also being refined. Amalgamation of Chesapeake & Ohio and Baltimore & Ohio not only confronted the unified management with a locomotive fleet doubled in size, but also with an opportunity to introduce new management techniques. It was decided that "good maintenance is not simply preventive maintenance or overhauling a piece of working equipment in the hope of forestalling a failure," but that "repairs and overhauls should be predictable."

● **Computerized information system.** C&O/B&O has since been establishing a computerized information system to produce the statistics and measures which permit true maintenance administration. By July, it is expected that the system will be producing motive-power cost indications, and reliability curves for the life cycles of various locomotive components. A maintenance engineer for American Airlines described the success which air carriers have been achieving in applying similar techniques. Introduction of the turbine engine a decade ago permitted a thorough reappraisal of power plant maintenance. While it has taken ten years, he said, American has reached a stage in maintenance where instead of having its engines "manage its maintenance programs, the programs are finally managing the engines."

A Southern Pacific engineer described the advantages of automated diagnostic testing (SEARCH) in early detection and correction of locomotive defects. The result, he reported, is improved performance and increased effectiveness in service. Analysis of groups of high-horsepower locomotives in SP's fleet has shown a four-fold reduction in traction motor and main generator defects when diagnostic testing is introduced. ■

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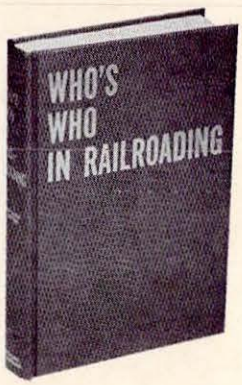

- His present title or position
- His business address and home address
- His age, marital status, family
- His career—including railroad, professional, military
- His technical society memberships, public offices held, books and articles written
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VIEWPOINT

Bill Stokes, will you please give classes?

What the transit industry maybe needs is more people like Bill Stokes, general manager of the Bay Area Rapid Transit system. As pointed out in the story on p. 16, BART was threatened with serious financial problems that almost spelled disaster. But the story has a happy ending, thanks to Stokes and his associates.

Even the fact that the BART project can now zoom on to completion isn't the whole story. As important a job as that is, the real significance lies in the lift this will give to the transit industry at large.

The early sixties were times of real anticipation in the transit field, as city officials around the country—with a glance over their shoulders at the Bay Area—started looking at the possibility of building transit systems of their own.

BART's well-publicized financial troubles had a psychological damping effect. What started out as studies for proposed transit systems elsewhere soon became studies of studies—in other words excuses for dragging the feet. A few cities where plans did carry on—Seattle, Los Angeles, Atlanta—saw transit proposals go down to defeat in public referenda on bond issues.

No one can say BART was responsible. But the lack of quicker progress in the Bay Area cut the ground from under the feet of transit supporters elsewhere, People can only want what they know, it has been said—and they couldn't very well want something like BART, going by aging test track photos and off-in-the-future artists' conceptions of finished systems. Least of all when they are told that the project isn't going anywhere for lack of funds.

NOW THE PICTURE HAS CHANGED

But with so much of the basic system now taking shape, and with the money assured to complete that system, transit supporters around the country can take heart. One picture is worth a thousand words—and coming BART photos of completed stations, new cars and tracks are worth all of the artists' conceptions in the world, when it comes to promoting the transit idea.

While saluting Stokes for his accomplishment in the Bay Area, it's worth wondering if transit supporters pushing for other systems shouldn't be taking a leaf from his book, when it comes to getting action.

After all, the problems in the Bay Area are not much different from those of any other metropolitan area: Skimpy funds for public works other than highways; lack of public awareness; constantly conflicting policies among planners and politicians. Stokes solved these problems not once but twice; The first time in 1962, when Bay Area voters approved the BART system; the second time just now, when the state of California was induced to provide additional aid to BART.

In both cases, Stokes planned effective strategies to mobilize public opinion, win over lawmakers and influential civic leaders. Maybe Stokes' office on Mission St. in San Francisco should be dubbed BART Test Track II—the place where successful ideas in transit policy got their start.

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